

February 1990

The National Locksmith®



Electronic Locking Products

Contents

Features

26 Electric Lock Installation

Jack Roberts tells us here all about the general principles involved.

32 Troubleshooting Electronic Systems

James Marshall shows there's no magic to these jobs.

34 Electronic Locking Products

This special product review section is a good preview.

42 Dale Battles Pittsburgh

Is Dale Libby going to take on the entire city of Pittsburgh? Not really.

48 On The Lighter Side

Sara Probasco must be eating too many fortune cookies.

50 The Kwikset Leverset

Bob Sieveking has taken apart a new lock so we can put it back together.

58 Mazda And Probe Service

Shirl's article gives you the low-down on ignition and steering column work.

68 The Roving Editor

Your Editor, Marc Goldberg, thought he'd enjoy a few warm days.

72 Sargent's 10 Line

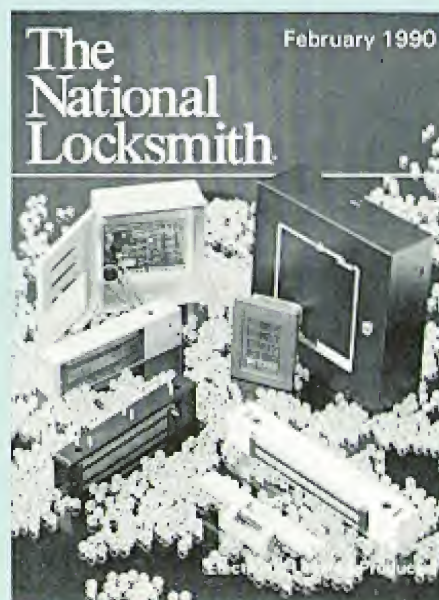
This lock has some features to offer the locksmith and the customer.

85 Hyundai Sonata Codes

These codes are valuable for future reference. Please save them.

94 Shop Talk

This month Shop Talk answers questions about interesting stuff.



On The Cover

Products featured on the cover of this month's Access Control/Electronic Locking Issue are: (in alphabetical order) Doorguard Systems, Inc.; DynaLock Corp.; Hirsch Electronics; Locknetics Security Engineering; and Rofu International.

*Click on the article
you wish to read*

Departments

5 Commentary 6 Letters 11 Technitips 20 Newsmakers

Editor/Publisher Marc Goldberg
Managing Editor Sandy Kucharski
Editorial Assistant Veronica Razzano
Circulation Manager Tracey Brady
Production Consultant Marian Raney
Technical Editor Robert Sieveking
Technical Writers E. Lee Griggs, Ed Hill, Dale Libby, Joseph Locke, Regis McCafferty, Dave McOmie, Rick Ohmit, Don O'Shall, Sara Probasco, Jack Roberts, Shirl Schamp
Advertising Sales Mgr. Thomas Mlodoch
Advertising Sales Asst. Debbie Schertzing
Technical Advisors Richard Bushe, Robert Robinson, Sean DeForrest, Bert Michaels



The
Audit
Bureau



The National Publishing Company

The National Locksmith® ISSN #0364-3719 is published monthly by the National Publishing Company, 1533 Burgundy Pkwy., Streamwood, IL 60107. Phone: 708-837-2044. FAX: 708-837-1210. Second class postage paid at Bartlett, IL 60107 and additional mailing offices USPS 040110. Subscriptions \$30.00 per year in the USA, \$32.00 per year in Canada; \$37.00 in all other countries. Single copies \$4.00 each. Postmaster, please send change of address to National Publishing Co., 1533 Burgundy Parkway, Streamwood, IL 60107

©1990 by The National Publishing Company. All rights Reserved.

Printed in the U.S.A.

The National Locksmith does not necessarily endorse products or services advertised.

Commentary

A Simple Key

The following poem was sent to me in 1987 by Dan Sousa at Intermountain Lock & Supply Co. It has been sitting in my file all this time! But I recently uncovered it and thought I would share it with you.

It's Just A Simple Key

I had one key to my lock and that
key I cannot find.
It's just a very simple key, see
there, that's the kind!
No, not that one--to your right.
Oh, those are blanks you say?
Let me draw it for you. See here,
The key is cut this way.
It's just a very simple key and
it's about this wide,
And has two or three or four cuts,
here along the side.
I think it has grooves in it; I
don't believe it's flat.
Now, this is just how it looks,
and you can cut from that.
You see, it's just a very small
and simple, little key.
And while you're at it you can
make me three.
If they don't work, of course,
they are guaranteed?
On second thought, one is all that
I will ever need.

I hope you enjoyed that poem as much as I did! Customers are great, right? Without them, no one would make much of a living. But customers can also be enough to ruin your day sometimes. Recently, I spent a day on the road with a locksmith buddy of mine. You can read my article all about it in this issue.

It was a good day and we were kept busy. However, I noticed one common thread that connected each and every call, one to the next. Not one of those customers knew what he or she really wanted or needed. Oh, they all realized that they needed a locksmith, all right. It's just that they wanted "master keying" when they really needed re-keying. Or a door needed repair at the bank, only no one knew which door it was or what was wrong with it anyway.

Customers called us out for all sorts of problems, but they really had absolutely no idea about what a locksmith does. I believe this caused us a lot of unnecessary frustration. Do you find this to be a problem in your business? Or was it a coincidence that every person we called on had a goofed up idea of what a locksmith could do for him? Write to me and tell me what you think of this problem. Is it really a problem, or did I just meet the wrong people that day?

I really think that a project should be considered to help educate the customer as to what a locksmith is and what a locksmith can do. That would make life better for us. And I think it would be an improvement for the customer as well. What do you think?



Marc Goldberg
Editor/Publisher

February 5

Letters

Comments, Suggestions and Criticisms

The National Locksmith is interested in your view. We do reserve the right to edit for clarity and lengths. Please address your comments, praise, or criticism to: Editor, The National Locksmith, 1533 Burgundy Parkway, Streamwood, IL 60107. All letters to the editor must be signed.

Window Suggested As Fire Escape Option

The debate concerning double cylinder deadlocks demonstrates the narrow view and understanding of the problem of fire safety many of my fellow technicians have. The usual cause of harm in a fire is smoke inhalation. Do we really want to, as security consultants to the public, advise someone who wakes to the sound of a smoke detector to open their bedroom door and grope for a key in a door, or should we advise our customers if possible to exit through a bedroom window directly to fresh air.

Most building codes specify that any room should have two openings (doors or windows) for this reason. I am sure someone who lives in areas of mainly high rise construction will scoff at this idea but I have a few live customers that have thanked me for the idea.

Ray Hearn
Missouri

Customer's Response In Lockout Situation

When the police department dispatcher telephones me, it rarely has anything to do with my 14-year-old son. In a town of 8500, most people call the police department when they get locked out of house or car, so I get quite a few calls from the dispatcher. This particular time the call dealt with a car lockout.

The 1983 model vehicle had the "dreaded electric locks." The owner was a very nice lady about retirement age who "had never had this happen before." As I was opening the car from the passenger's side, the owner was watching from the driver's side. As I pulled the door open, I said, "There you go, Ma'am." She responded, "Well, yes, young man, you've gotten in over there; but, how do I get in over here?"

Bob Tallman
Iowa

who had been out shopping for holiday presents and had locked his keys in his car. The windchill temperature was about 40 below zero and he didn't care to try the old coat hanger trick! After agreeing on the price, he asked me to come down to unlock his car, and made it known that he was very angry about locking his car.

When I got there, he asked "Don't suppose you have a holiday special, do ya?"

"What did you have in mind?" I queried.

"Well, I had hoped for a lower price," he replied.

"Sir, you must understand that this is part of my business, not a charity, but I'll be glad to hum a Christmas carol for you while I get your car open."

He thought this was quite funny, started smiling, and invited me to proceed with the job.

David A. Keenan
Vermont

Locksmith Spreads Holiday Cheer

I thought that you might be interested in the following story which happened to me this week, for your "A Funny Thing Happened On My Way To The Lockout" feature. I received a phone call around supertime from a man

A 'Dog-gone' Rough Car Opening

I am a practicing locksmith and I am glad to be a member of *The National Locksmith*. I was called by a woman who was pretty excited. She had stopped her car in the driveway to check the mail. She left her door open



STRATTEC™

**It's your reputation.
Trust the original.**

[Click here
for more
information](#)

and the car running and the wind blew the door shut with her dog inside.

I told her I would be right out. When I got there she was pretty calm which I was glad for. This was a 1984 Lincoln Continental with electric slide locks. I checked the inside latches and wondered if my under the glass tool might just get inside. I wanted to be calm and professional, but when I got my tool stuck in the door I turned a little green around the ears.

In the meantime her dog was trying to bite me through the window glass. By this time she was feeling bad for me as I was beginning to believe I wasn't going to get my tool back. But using all the professionalism I had left, I got my tool back.

I went to the truck and happened to find a Continental instruction page. I got the right tool and proceeded to open the door. When I finally hit the magic spot, the door popped open. The dog headed for me and I slammed the door again to keep the monster away from me. As I was picking up my hardware the dog got to me. I am glad he was small because his nips at my legs didn't hurt as bad as much as they scared me.

I received my pay and started toward the truck. Lo and behold here came the

dog for me again. I'm 57 years old, but I outran the little bugger to the truck. The only good thing about the whole deal was that the lady was happy and is now aware that the newer models are more difficult to open.

I enjoy and look forward to *The National Locksmith* each month.

James Davis
South Carolina

Locksmith Praises Flat Rate Manual

The Flat Rate Manual is a great job... well done. Your interpretation of a Flat Rate Manual looks well thought out for most shops for the average type of work that most of us do. As a former printer/typographer/publisher I am impressed with the quality of the paper used, the binder and the over-all style. In my own copy I will add tabbed pages so that I can get to each section quickly.

May I thank the author on behalf of the whole Locksmithing Industry for adding this much needed item to our arsenal of business survival. Now your job has just begun. The follow-up is to get the whole industry to use the book ...and to use it wisely.

I believe that the use of your book can become a force to raise the public's image of us. I've raised our image in the eyes of my clients by appearing on the job site dressed in shirt and tie with a blazer. It is easy to use a smock to keep clean.

And when I use *The Flat Rate Manual For Locksmiths* I find that the customers rarely argue about my prices, which are a bit higher than most. Keep up the good work.

Wynn Kessler
California

TNL Code Books Deemed 'Just Right'

Thank you for your faxed response to my inquiry about the NFCB code set. *The National Locksmith* set appears to be just right for our needs at this point in one of our shops, particularly with the annual update feature. We also love the magazine!

Ron Lee
Tasmania



SCHWAB CORP.

Fire protection for your vital records.

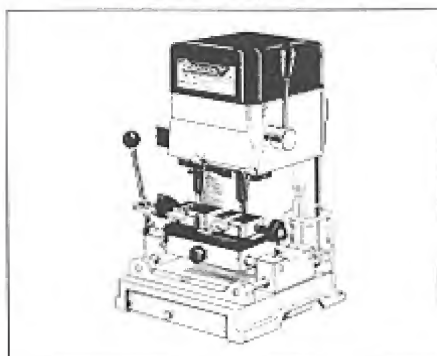
It's not safe unless
it's Schwab Safe.

[Click here for more information](#)

Enter the 1990 Technitips Contest

\$\$\$ Thousands and thousands in cash and prizes! \$\$\$

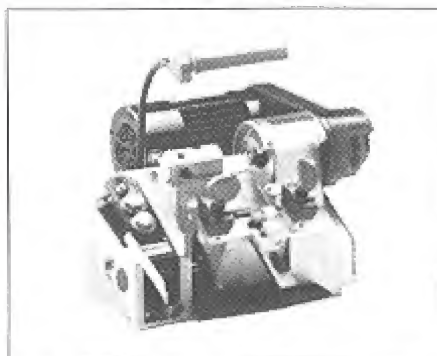
HPC Laserpoint



First Prize

This is HPC's ultimate key duplicator for high security keys, BMW, Mercedes, DOM, Kaba, Volvo and others. Laserpoint is heavy duty lever operated, and has easy adjustable cutters and tracers.

Silca Bravo USA



Second Prize

Locksmith designed, the Silca Bravo USA is a quality semi-automatic duplicator. Four-way jaws hold even the smallest keys as this. One of the most accurate key machines on the market.

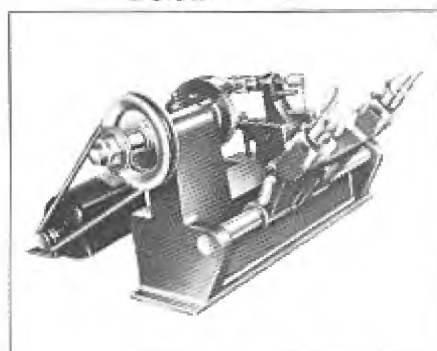
ESP 660



Third Prize

The model 660 key machine can be used for manual cutting or, with the flip of a switch, it will cut keys automatically. It is designed to accommodate large head keys such as hotel and foreign auto blanks.

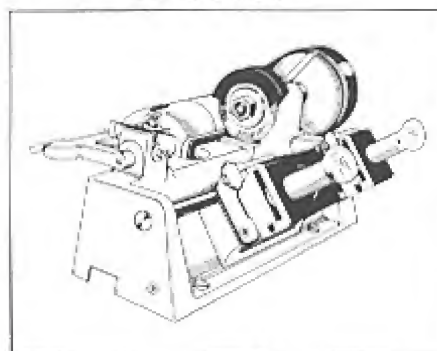
Belsaw 200



Fourth Prize

Duplicate, cut by code, cut flat steel keys. Complete machine with motor, three cutters, guides, and instructions. Built-in micrometer.

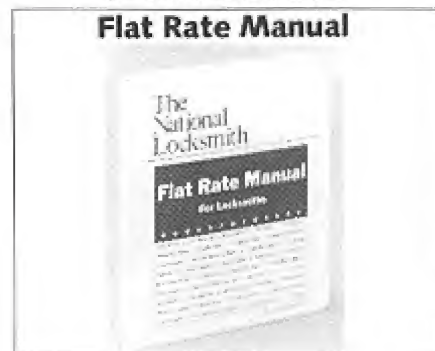
HPC 9120



Fifth Prize

HPC's newest and most compact key cutting machine features reversible jaws. Double-sided copy dog cuts flat steel and safety deposit keys and has softy brush. Excellent versatile machine.

**\$100 Cash PLUS
Flat Rate Manual**



Sixth Prize

\$100.00 in cash will brighten your day! So will the *Flat Rate Manual for Locksmiths*. The manual will help you price your services for profit. You won't have to guess how to price ever again.

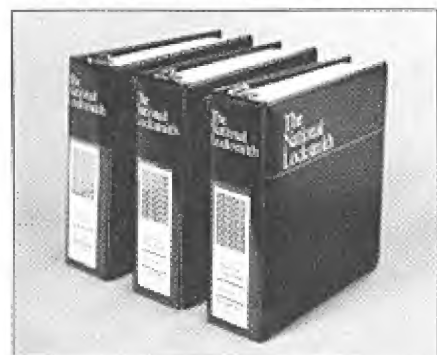
**Code Books From The National Locksmith
Padlock Code Book Set (NPCB)**

General Code Book Set (NGCB)



Seventh Prize

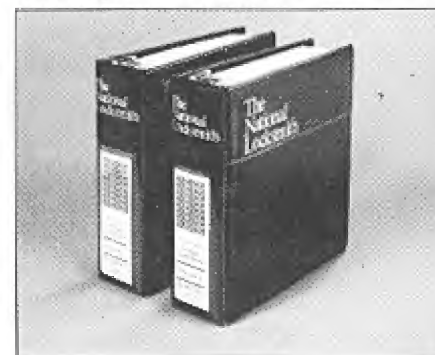
These three books contain 450,000 codes covering domestic lock and automobile codes.



Eighth Prize

These three volumes offer 462,000 covering Dudley, American (Junkunc), Master and Yale.

Foreign Code Book Set (NFCB)



Ninth Prize

This two volume set holds 432,000 codes for the complete variety of foreign codes, from Alpha Romeo to Yugo.

Technitips

Helpful Hints from Fellow Locksmiths



Send me your Technitips. Who knows, you may be our next winner! c/o The National Locksmith, 1533 Burgundy Parkway, Streamwood, IL 60107.

by Robert Sieveking

Congratulations to all those who find their Technitips printed here this month. Thank you for your participation. Special congratulations to this month's winner.

Check out the contest prizes for 1990. Which prize will you claim next January? What will be your reward for the few moments you spend at the drawing board or the typewriter? Just don't stop at the copy machine on your way to the mailbox with that Technitip. Remember, you must submit your tip to The National Locksmith exclusively, to be eligible for prizes. You're probably asking yourself, "Where else would I send my best ideas?" There's no finer showcase for your Technical ideas than The National Locksmith magazine.

This month to encourage you to send your tips, I have submitted one of my own which appears this issue. Of

course, I can't reward myself a prize. But I'd love to give you one!

February's Best Tip

This Technitip concerns removing the door trim pad on the GM "N" body autos (i.e. Calais, Somerset or Grand Am). These cars have the standard mushroom type fasteners as well as concealed phillips head screws. In addition, the trim pad is fastened with some retainers that are affixed to the upper edge of the trim pad, and enter the door vertically from the top of the trim pad. These vertical clips will break off of the trim pad if the pad is not removed properly.

The easy way to do this is to take a standard cotter key extractor as seen in illustration one, and lift the inside molding off of the inner door frame. This will leave room for the pad to slide straight up after the other fasteners have been released. Simply insert the extractor under the jamb end of the molding and slowly lift the molding up. The retaining clips on the molding release easily, and will allow you

A cotter key extractor, which resembles a heavy scratch awl with a 90° bend at the tip,



makes a fine tool for removing auto door trim.

Illustration 1

ample room to remove the trim pad.

The pad is relatively simple to remove if you follow this tip. If not, you will break the retainers off the pad, and they will have to be epoxied back in place to make the pad fit properly.

Thomas Mazzone
Illinois

My Technitip is for a really simple roll-up gate lock. Recently, we needed a special locking device for the roll up gates of an area school that we service. The locks that were installed in the gate

How To Enter

All you need to do to enter is submit a tip, covering any aspect of locksmithing to *The National Locksmith*. Certainly, you have a favorite way of doing things that you'd like to share with other locksmiths. Why not write it down and submit it to: Robert Sieveking, Technitips' Editor, *The National Locksmith*, 1533 Burgundy Parkway, Streamwood, IL 60107.

Tips submitted to other industry publications will not be eligible! So get busy and send in your tips today! You may win cash, merchandise, or even one of many key machines or code book sets! At the end of the year, we choose the winners of the listed prizes.

Last year dozens of people walked off with money and prizes. Wouldn't you like to be one of the prize winners for 1990? Enter today! It's a lot easier than you think!

Every Tip Wins 'Locksmith Bucks!'

Yes, every tip published wins a prize. But remember, you must submit your tip to *The National Locksmith* exclusively. Each and every tip published in Technitips wins you \$25.00 in Locksmith Bucks! Use this spendable cash toward the purchase of any books or merchandise from *The National Locksmith*. You also receive a Bonded Locksmith bumper sticker, decal and patch. Plus you are now eligible for the really big prizes!

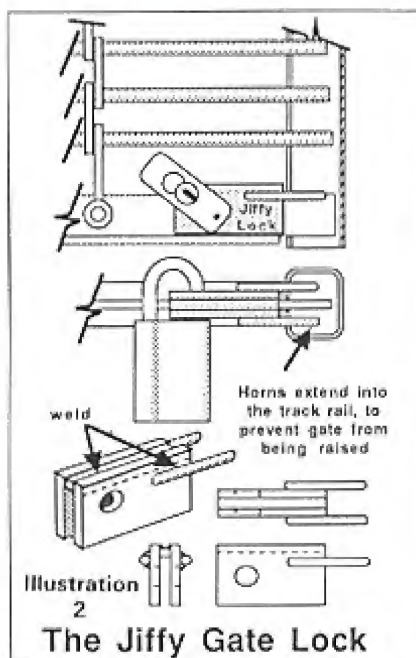
Best Tip of the month prizes!

If your tip is chosen as the best tip of the month, you will win \$50.00 in cash as well as \$35.00 in Locksmith Bucks! Plus you will receive a quartz Locksmith watch, a Bonded Locksmith bumper sticker, decal, patch and a Locksmith Cap. Plus, you may win one of the annual prizes.

fabric were just not worth repairing. After a little consideration, and some discussion with the boss, we came up with the "jiffy gate lock."

Illustration two shows the Jiffy Gate Lock. It's a weld project that takes only about a half hour to complete. The side plates of the clip were made from $\frac{1}{4}$ " plate and the horns are $\frac{1}{4}$ " steel rod. A piece of $\frac{1}{4}$ " rod was welded between the side plates as shown. This spaced them apart, so they would slip easily over the "T" bar at the bottom of the pull down gate. The horns were then welded to the outside of the clip, and a horn was drilled through the side plates to easily accommodate a standard padlock shackle.

Because there were a number of gates that needed to be locked, it was important that the installation be as



simple and fast as possible. That's why we call this the "Jiffy" gate lock. To install the lock, simply pull the gate down all the way and lay the clip over the "T" rail, as it will be when it is installed. Slide the clip against the vertical channel and mark the locations for the holes in the channel. Lift the gate and drill two clearance holes for the $\frac{1}{4}$ " horns of the clip. Close the gate again, and install the clip onto the rail and slide the horns into the vertical gate channel. Mark the location on the "T" rail for the padlock shackle clearance hole. Remove the clip and drill the channel. The hole should be large enough to easily slip the shackle through the clip and gate rail. Install the gate lock and padlock it in place. I would recommend that the gate be locked down on both sides to prevent the lifting.

The Jiffy Gate Lock did not require any welding on the gate or in the school, and nothing was installed in the floor or wall that could become a "trip hazard" for the students. By using padlocks, we were able to key the gate locks to the school's master-key system. When the gates are unlocked the locks and clips are removed by the custodian, leaving no way a student can lock the gates down as a practicaljoke.

Bob Sieveking
Technical Editor

Major
MANUFACTURING, INC.

Installation Tools

The Professionals Choice

[Click here for more information](#)

I would like to enter this tip in your 1990 Technitips contest. For many years I have used this method for laying out a door for drilling, and find it most useful. By copying the paper guide that comes with most locksets onto a piece of sheet metal, you will have a permanent guide for locating the cross bore and edge bore holes of a cylindrical lockset. Bend the metal carefully, so that it can be hooked over the edge of the door.

Another guide, made from a piece of $\frac{1}{4}$ " steel, can be made with a $1\frac{1}{2}$ " or $2\frac{1}{4}$ " hole, and used to pilot your hole saw if you are called to correct a do-it-yourself job gone bad or enlarge an existing hole to accommodate a new lockset. Simply clamp the guide to the door at the correct location and redrill the hole. This drill guide will keep your hole saw from wandering and give you an accurately spaced hole where purchased drill guides are either too bulky or too large to be clamped to the door. (See illustration 3.)

A piece of thin rubber gasket material glued to the inside of this drill guide

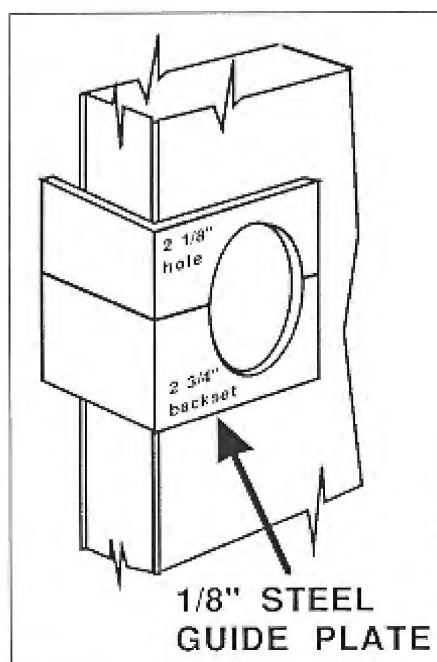


Illustration 3

will prevent it from slipping when clamped to a metal door. The pad also prevents the guide from marking the painted surface of the door. (Don't forget to pad any clamps used.)

John Berg
South Carolina

When picking a Schlage lockset at the bench, I have on a number of occasions, had the tension tool pop out of the keyway just as the lock is picked, but before the knob retainer can be depressed to remove the knob. This of course relocks the cylinder and requires the lock to be picked again. The frustration created by this type of situation is what drives mere mortals to drill.

This Technitip is in the form of a discovery. I discovered that if you depress the latch retractor slide with your thumb after the lock is picked, the keyway will stay in any position you want and make knob removal much easier. This tip will also work with other brands similar in design to the Schlage.

T.R. Taylor
Colorado

This tip concerns an excellent way to enlarge and shape the hole in the strike plate of a latch or deadbolt lock. Many times, as the weather changes with the seasons, a lock that was properly installed and worked easily in the summer, will no longer latch as the winter chill changes the door alignment. Most times a little adjustment in the size of the latch hole will allow the

door to work freely again. This adjustment method does not require removal of the strike plate, only takes a few seconds and leaves a better appearance than filing or chiseling the strike plate and jamb.

If you use a Dremel Moto-Tool with the solid carbide file cutter (see *illustration 4*), the metal strike plate and the wood behind it can be shaped to perfection without any trouble at all. You will find the carbide cutter a little more expensive, but the higher cost is well worth the results.

Be careful to keep the sides of the

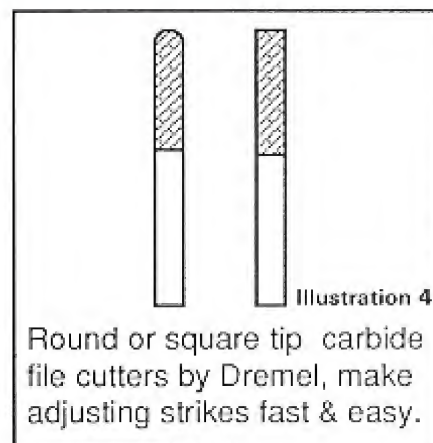
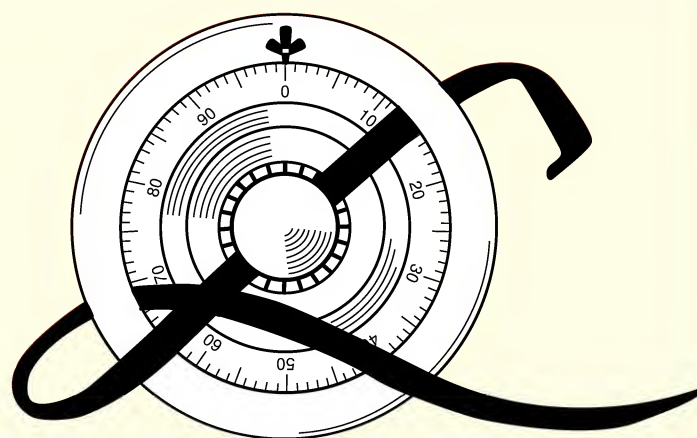


Illustration 4

Round or square tip carbide file cutters by Dremel, make adjusting strikes fast & easy.



**Lockmasters
has a 44
year history
of training
security
professionals.**

[Click here for more information](#)

strike hole straight as you enlarge it. Do not force the tool, and as always, wear your safety glasses.

Michael Jorden
Ohio

For a more professional appearance, and to make it easier to find the correct tools, this Technitip is a method of organizing the High Tech 1700 tool kit.

Though the carry case is designed to hold all the tools, it is very frustrating to sort through all the different tools to find a specific one. If you will make three pallets (see photograph 5), your case will stay neat and organized. By



5. Make three pallets for organization.

keeping your tools organized, you will be able to find the correct tool in a flash.

The pallets are made of 1/8" wood paneling material. Wide elastic straps, available in most fabric stores, are pop riveted to the panels to hold the tools securely in place. The High Tech encyclopedia binder is held in the top of the case by two leather straps, which are also pop riveted to the carry case. Use large washers to reinforce the case and straps where you pop riveted them together. This will prevent the strap from tearing loose.

Jean F. Mannix
Illinois

This tip is for a nifty way of hiding a key on an auto. With so much plastic on today's cars and trucks, the magnetic boxes are becoming harder and harder to place. To conceal the key, remove or loosen the license plate and using a piece of duct tape, seal the key to the back of the plate. Tighten the license plate back in place. The possibility of the key falling or being bounced out of its hiding place is very remote. If you need the spare key, loosen or bend the license plate to reveal the hiding

place.

Hansen
Texas

Here's a Technitip concerning the new style GM tilt steering column. One of my manuals refers to the removal of the tilt spring retainer by using a 1/4" flat blade screwdriver. I find that a number three phillips driver works much better as it engages all four corners of the retainer hole.

The manual also states that you should use a screwdriver or needle nose pliers to remove the buzzer switch. I find that the best method for me is to use the hook of my "transmission pick" and go for the small tab on the right of the buzzer switch. The short bend at the tip of the pick can be eased behind the tab and the buzzer switch lifted straight out without damage. (See illustration 6.)

The most important part of this tip is that the steering wheel must be in the tilted up position in order to get at the buzzer switch and thus the cylinder retaining screw. I have found that my manual is one of the most complete instruction on these columns, but there is no mention of having the wheel in the "up" position.

NATIONAL

AUTO LOCK SERVICE, INC.

National Auto Lock Service, Inc. offers a wide range of equipment and services for the Automotive Locksmith. From tools and hard to find key blanks to transponder programming, we can take the mystery out of car service. We accept credit card orders, and can ship COD. Contact us for the latest in automotive technology.

www.laserkey.com

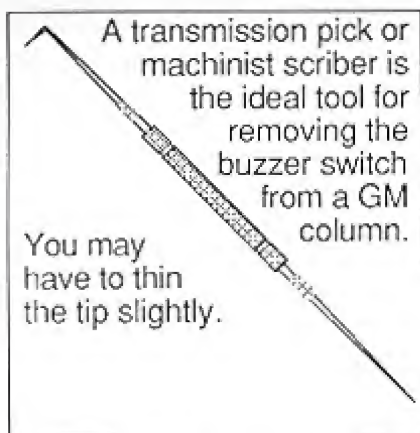


Illustration 6

Robert R. Larson
South Carolina

I recently had a call to convert a double cylinder deadbolt for single cylinder operation. The owner wanted the deadbolt to operate with a turn button from the inside, but save the option of converting the lock back to a double cylinder in the future. The solution as shown in illustration seven is the subject of this Technitip.

Top pins (drivers) and springs were only installed in the second and fourth positions of the cylinder. The key was

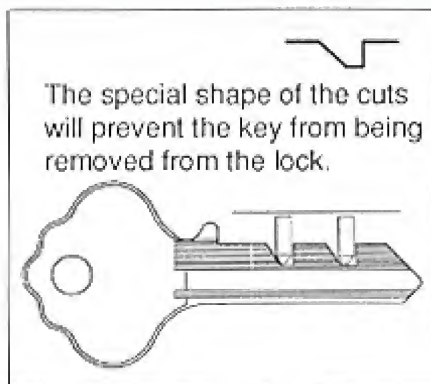


Illustration 7

cut with a moderately deep cut, but the ramps on the key were shaped like those shown in the illustration. This prevented the key from being removed from the cylinder. The modification to the inside cylinder can be reversed at any time. Simply remove the key and recombine the cylinder for normal operation.

Juanita Ramsey
Texas

As we give consideration to hiding a spare key to prevent a lockout, I submit the following Technitip as a neat way for the handicapped to have a bit of

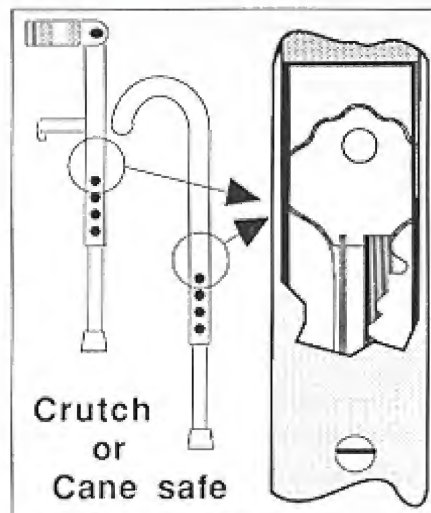


Illustration 8

security without risking the possibility of a lockout. This tip may not be adaptable to every situation, but it has been a great help for those I've made them for. I call it a crutch or cane safe. The only materials needed are a $\frac{1}{2}$ " x 3" plastic pill bottle (with a screw top) and a few minutes of time to modify a key to fit into the container. You will have to trim the sides of a standard house key if it is to fit into a $\frac{1}{4}$ " bottle. (See illustration 8.)

Remove the adjustable portion of

medeco[®]
HIGH SECURITY LOCKS

**The market leader
in locking systems for security,
safety, and control.**

[Click here for more information](#)

the cane, and insert the "safe" into the hollow body of the cane. Reassemble the cane, and the cane safe will be captured until you need it.

J.F. LaBerge
Canada

Editor's Note: If you charge a dollar and a quarter for the key, roll up the quarter in the dollar bill, and insert it into the pill bottle with the key. Explain to your customer that the dollar keeps the key from rattling and the quarter is for the phone. If you have your shop name and phone number stamped on the key, show it to your customer and explain that if they need any further service just call. Don't worry about the money, it'll come back.

My Technitip is about the Mercedes single sidwinder (2-track laser cut) keys and locks. I have had a number of customers complain of intermittent operation of the locks. The symptoms are that the ignition lock hangs up, and cannot be turned to the on position. Remove and reinsert the key or wiggle the key and the lock will work. Once the plug is turned, the lock works freely. The problem is wear in the lock

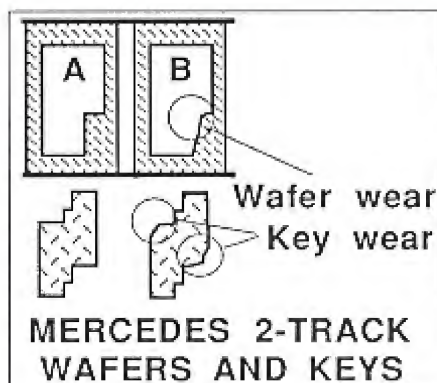


Illustration 9

wafers and the key. (See illustration 9.) Original Mercedes keys are steel, so the wear is greater in the lock and wafers than on the key.

The best solution for this problem is to replace the ignition lock cylinder. The lock can be purchased through the Mercedes dealer but only by the car's owners. Locks ordered through a Mercedes dealer are ordered by the VIN number of the auto, and will come properly keyed. This ignition lock cannot be economically serviced, as the hardened lock face is pinned in place.

A good temporary solution to the problem is to duplicate the customers' key. By duplicating the key, the worn

edges are restored. This tip will give good results in most cases, but avoid callbacks by suggesting that the owner have the ignition lock replaced.

John Mussell
Idaho



HPC, Inc.
Designing
Excellence
and
Manufacturing
Quality since
1956



We have it all.
Quality, Value,
& Service.

[Click here for more information](#)

[Click here for more information](#)

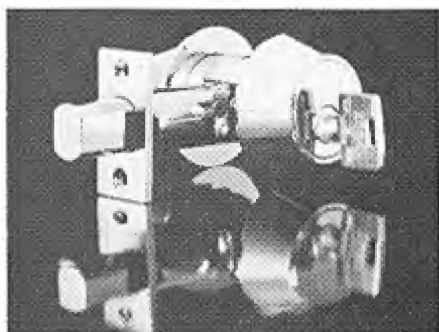
Newsmakers

New Products and Industry News

ASSA Introduces A High Security Deadbolt

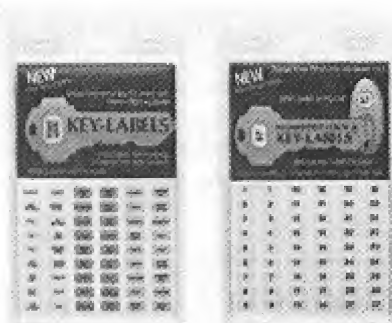
The solidly constructed, UL-listed ASSA® 6000 High Security Deadbolt has been designed to withstand any form of physical attack, including picking, drilling, prying, driving or pulling. Constructed of solid steel and brass, it features a rigid bolt mechanism consisting of a seamless bolt housing which surrounds a hardened solid steel bolt, hardened to approximately 68 Rockwell for maximum sawing protection.

It has a full 1" throw to resist prying; a tapered, free-spinning cylinder guard ring that defies wrench attack; a solid steel high security strike that installs deeply within the door frame and attaches to the building structure to defy physical attack; and ¼" aircraft-strength cylinder mounting bolts that are concealed within the cylinder housing and which secure one cylinder to another for added protection.



Vinyl Key-Labels™ Identify Keys

Self-adhesive vinyl key labels which are designed to stick to any type of key have been introduced by Ke-Master, a leading manufacturer of key control systems. Two different packets of key labels are available, each with 132 color-coded labels packaged in clear clamshell cases and supplied in 48-case counter displays.



One packet contains numbered labels for matching keys and locks (two each of numbers 1 to 66). The other packet contains 132 "designated use" labels, color-coded for frequent use (e.g., garage) or infrequent use (e.g., thermostat). The key labels are supplied in master cartons, each of which contains six 48-case shippable counter displays.

Arrow Distributes New Hardware Catalog

An updated architectural hardware catalog is now available containing complete information on all Arrow locks, exit devices, door closers, alarms and interchangeable core products. It includes detailed specification data plus descriptive information on functions, finishes, accessories and packaging. Numerous photographs illustrate the various designs for easy reference in meeting your requirements. The new binder design facilitates accessibility on your shelf.



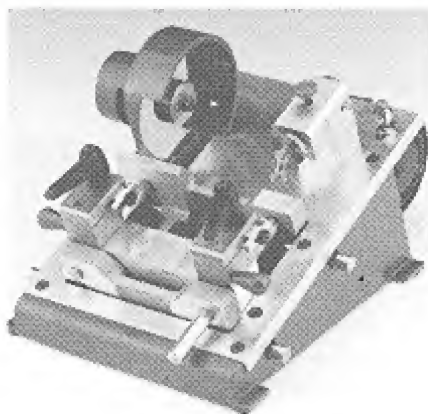
**The Innovation You
Expect, with the
Flexibility You Need!**

[Click here for more information](#)

Precision Product's Flat Key Duplicator

The "Half-Time" manufactured by Precision Products, Inc., is a flat SDB Duplicator designed to cut a pair of keys at the same time.

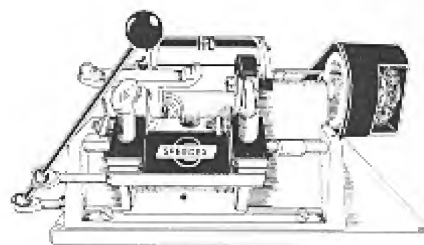
Its "X-Y" design provides the accuracy and the ease of use of a mini milling machine. Options include four different solid carbide cutter widths: .055", .062", .072" and .088". A flexible work light and 12-VDC motor is included. The "Half-Time" is an American-made product.



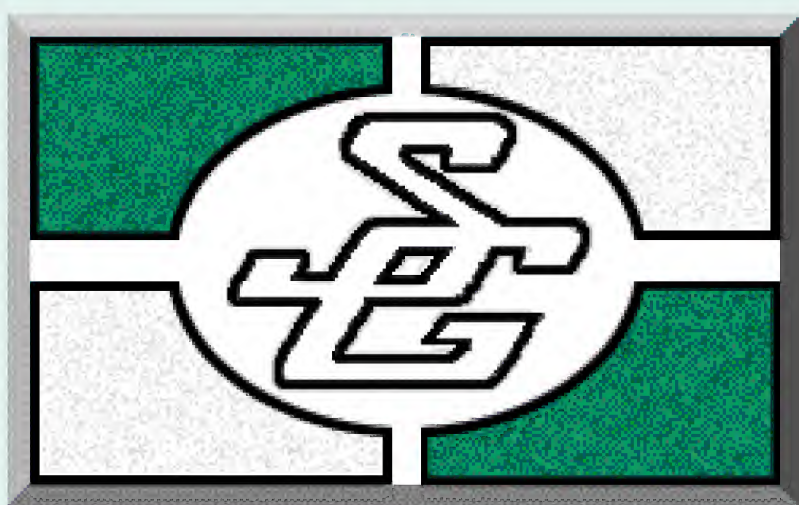
Circle 242 on Rapid Reply

The New 9170 From HPC

This new machine has all the design features of the 9160 MC except it is operated by a lever. This design allows the carriage to move smoothly with the use of one hand when cutting keys. The 9170 MC is designed to cut large head keys (such as hotel keys) and has reversible jaws for cutting double sided keys (such as foreign automotive or cash register keys). The reversible copy dog allows you to cut flat steel keys, when the optional side milling slotter cutter wheel (CW-45SMS) and washer (9100-6B) are purchased. This machine is available with a 12-volt motor for mobile use.



Circle 243 on Rapid Reply



**Make Sargent &
Greenleaf's
Comptronic locks
your choice
for electronic
safelocking
solutions.**

[Click here for more information](#)

Ultra Hardware Catalog Published

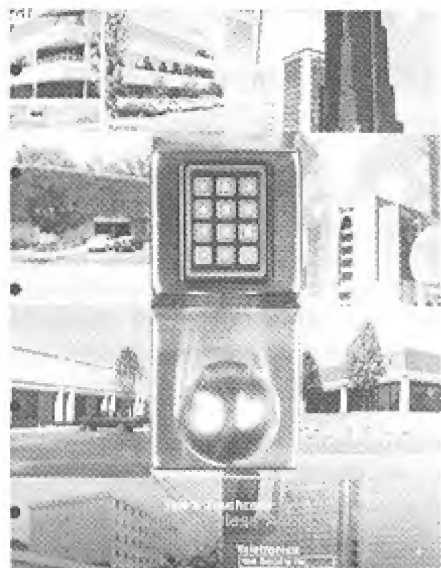
The Ultra Hardware Products 1990 catalog contains 160 pages of the most popular replacement hardware, building specialties, security products and weatherstripping, available from any single source. The publication also contains a price structure that is one of the most competitive in the industry. The new catalog is available free of charge and without obligation.



Circle 244 on Rapid Reply

Yaletronics Introduces Touchcode® Brochure

A new four-page, four-color brochure detailing the Touchcode® keyless electronic access system has been introduced by the Yaletronics division of Yale Security Inc. The brochure highlights features and provides technical and application information on this self-contained, battery-powered, keypad unit which combines the security of a mechanical lock with the versa-



tility of electronics.

Features outlined in the brochure include: Touchcode's six-digit code which provides one million possible combinations; the "Management" combination which permits quick and easy activation or de-activation of any code; and the optional mechanical key override feature.

Circle 245 on Rapid Reply

Safety Lock-Outs By Direct Safety Co.

Cast aluminum lock-outs and color coded padlocks are available from Direct Safety Co. to comply with OSHA



Lock-Out standards. Lock-outs prevent start-up of power to equipment being serviced, and can be attached to power start-up mechanisms of equipment manufactured to OSHA standards, or to a central breaker box. Available in three sizes, Direct Safety's lock-outs are designed to accept up to six padlocks, and are vinyl finished for electrical installation. They prevent accidents and pilferage but can be forced by informed personnel in seconds if necessary.

Circle 247 on Rapid Reply

Hirsch Appoints Locksmith Distribution

Hirsch Electronics has appointed several locksmith wholesale distributors to handle its exclusive line of Digital Access Control Systems. American Lock and Supply has all models of Hirsch currently in stock and has successfully held product training seminars with Hirsch factory representatives at all of its facilities during the Fall of 1989. Additional distributors will be added early in 1990.

Circle 246 on Rapid Reply

SRI
SECURITY
RESOURCES INC.

SRI and Steve Young are working together to bring you the best in locksmith tools and supplies.

[Click here for more information](#)

Dorma Bulletin Highlights Cam Action Closer

A four-color bulletin from Dorma Door Controls, Inc. describes the Dorma TS 93 series closer.

Designed to complement an array of architecturally designed door openings, the narrow projection door closer blends attractively with its surroundings. The two-page brochure describes the closer's innovative cam and roller mechanism which helps to open doors easier

than traditional rack and pinion engineering. Adjustable backcheck and hold open capability are also fully described.

The TS 93 brochure contains full product descriptions, technical specifications and drawings, certification information, and a complete listing of closer finishes.

Circle 201 on Rapid Reply

New England Safe's Internal Control Safe

New England Safe presents a key

operated safe which allows the locksmith to easily change the key combination immediately. A specifically designed safe offers internal control for temporary deposits of cash and checks made during day or night operations.

Four model sizes are available with either slot or shutter openings, and protective baffle teeth and relocking device. Safes have pre-drilled bolt down holes for fastening under counters, on walls, etc. near cash registers or out of sight.

Circle 202 on Rapid Reply

ESP Keyblank Catalog Is Now Available

ESP Corporation announces the publication of their new Keyblank Catalog, #KBM-90. This expanded 40-page catalog is completely up-to-date with ESP's full line of cylinder and domestic automotive keys shown in size-for-size detail and features new sections on the hotel, nickel-silver and plain-coin lines. A new cross-reference comparison listing has been added that shows domestic and foreign auto keys that are used by U.S. auto makers.

Circle 250 on Rapid Reply



**ASP - Your Auto Service
Center for the World**

[Click here for more information](#)

Electric Strike Installation

"The electric strike is neither a door opener nor a door unlocker. A regular strike is an obstruction for a latch. Here, the obstruction is electronically removed."



Send your lock and key questions to Jack Roberts, The National Locksmith, 1533 Burgundy Parkway, Streamwood, IL 60107.

by Jack Roberts

There are probably as many misconceptions among locksmiths about electric strikes as there are misconceptions among the general public about the type of lock on a door.

Through 20 years in the business, I have found most people when asked "What kind of lock do you have?" usually respond, "Oh, it's just a regular Yale lock, you know, the kind where

you put the key in."

The general usage of the term "electric door opener" by the public, as well as by many locksmiths and other installers, adds to the confusion that often occurs when talking about remote access control or specifically, electric strikes.

The electric strike is neither a door opener nor a door unlocker. A regular strike is an obstruction for a latch. Normally the latch is retracted by turning a knob or pressing a lever. This removes it from the obstruction and allows the door to be opened.

With an electric strike the latch obstruction is removed and there is no action by the latch. The lock is still locked, the latch is extended, but the

door opens when physical pressure is applied while the strike is being activated.

It is not intended for this article to teach a course in basic electricity. Rather, I wish to emphasize that electric strike installation involves a bit more than cutting an opening in a door frame, pulling some wires and hooking up a button and transformer.

Installation is just a few simple steps, but the pre-installation planning is vitally important to a properly installed and trouble-free electric strike.

Although there are many models, shapes and forms of electric strikes from a wide range of manufacturers, there are only two basic methods of



Don't panic!
We have Security
Exit Devices.

[Click here for more information](#)

operation or control: armature or solenoid. To understand the difference between these two items, consider they are both formed from coils of wire. A short winding coil is an armature and a long winding coil is a solenoid. The length of this wire determines which is what.

An example of a strike is a standard doorbell with a clapper that rapidly strikes a bell when power is applied and continues to ring as long as the circuit is closed. Remove the cover and look at the windings. This is an armature. (See photograph 1.)

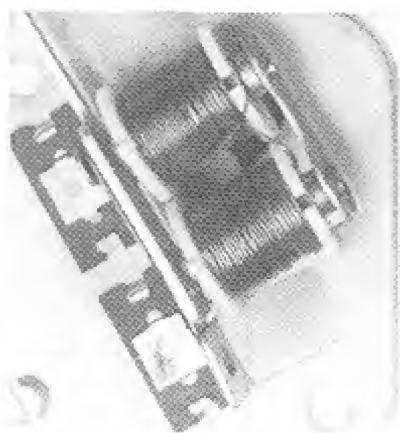
Now, think about the type of door-

bell that is not a bell but a chime or ding-dong type of alarm. Remove the cover and look at the windings, and you'll see this is a solenoid. (See photograph 2.) If there is only one sounding bar, it is a "ding" type. With two sounding bars, the bell makes a "ding-dong" noise.

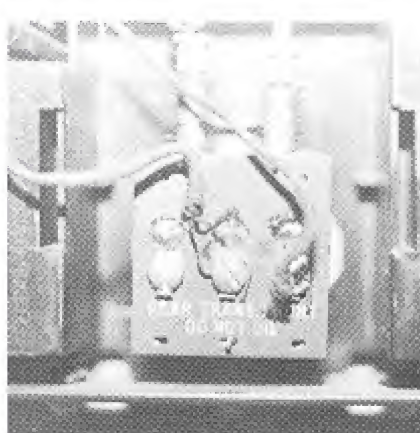
By applying continuous pressure to a doorbell button, no further sound is heard, other than the initial ding, because the striker is being held in position by the solenoid. When the button is released and pressure is no longer being applied, a spring moves the striker back to its original position and if there

is another sounding bar, it makes the dong. Power on, ding, power off, dong.

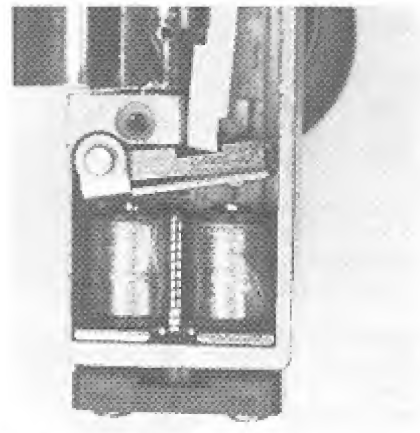
Intermittent and continuous duty are two terms applicable to electric strikes. Let's go back and consider the doorbells again. It is stated the armature type will continue to ring as long as the button is being pressed, and this is true, but only up to a certain point. The armature, with its shorter windings, has a low resistance and consequently, a higher current consumption. This combination creates excessive heat in the coil which causes it to burn out causing the bell to stop ringing. This is called intermittent duty. (See photo-



1. An armature inside a standard doorbell.



2. A solenoid inside an alarm bell.



3. An intermittent duty strike.



[Click here for more information](#)

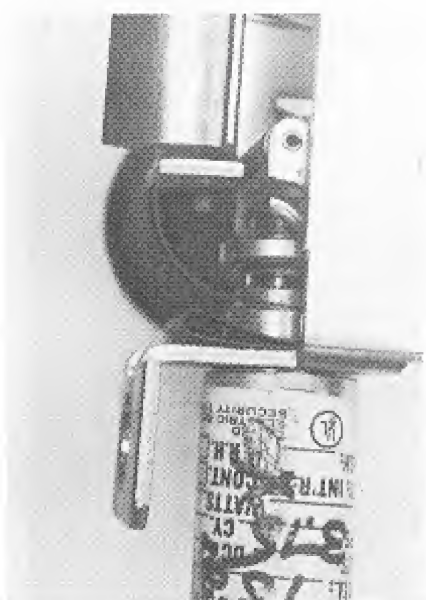
**ASP Covers
the World of
Auto Locks**



[Click here for more information](#)

*Every Installation
Is a Self-Portrait of the
Person Who Did It.
Autograph Your Work
with Excellence.*

graph 3.) The ding-dong solenoid type with its long windings has a high resistance and a low current consumption creating only moderate heat when the button is held closed for a long period of time. This is continuous duty. (See photograph 4.)



4. A continuous duty strike.

When planning for the job, determine the expected usage, select the proper strike, and decide whether intermittent or continuous duty will be used. Also, some solenoid type strikes are not rated as continuous duty so don't think because it is a solenoid you have a CD type of strike.

The voltage rating is another consideration vitally important to a properly installed and trouble-free electric strike. A strike must have a certain amount of power to operate properly. Electric power is measured in watts.

Some armature type doorbells give out a clattering soft type of racket rather than a clear, firm and distinct ring. Or, some solenoid type doorbells emit a dung-dung rather than a loud ding-dong. These conditions can be caused by one or several factors, but the main reason for the intermittent operation is lack of operating power.

Now apply this same thinking to an electric strike. If there is not enough power, the electric strike will operate erratically. The causes for this inconsistent operation range from the transformer not being the right size for the job to the right size transformer with wire too small to carry the load.

The small size wire is only allowing about half of the amperage that started from the transformer to reach the strike. One solution to this problem could be to increase the voltage rating of the

strike and the transformer which will allow the smaller size wire to carry the load.

Look at some of the questions that need to be considered in planning for an ES installation. What type of strike is needed? Continuous or intermittent, noisy or silent, fail-safe or fail-secure, AC or DC? Where is it to be installed? Wood, steel, aluminum, masonry or a

combination of any of these materials? Where is the switch (button) to be installed? What size transformer is to be used? Where is the transformer to be installed? What is the length of wire run, in feet? What size wire should be used? What type wire, solid or stranded? What obstacles and/or obstructions will be encountered? Will the wiring run through a plenum? (This is the



**To be a World Leader
You Need Quality
Products, Innovative
Technology and
Strong Partners.**

[Click here for more information](#)

dead air space between a drop ceiling and a ceiling.) Some codes may require that Teflon covered wire be used in plenum.

Some of the tools that are handy and often most essential in making an installation are a good flashlight (with extra batteries), a fish tape (or two), bell hanger bits, extension bits, extra long flexible bits, a good roll of electrical tape, a roll of string (20-30 feet), a length of beaded chain (20-30 feet), a small magnet that can be attached to a flexible rod, and a couple of wire coat hangers.

Actual installation will usually begin at the strike location and the manufacturers' instructions should be followed precisely. (Some strikes require perfect vertical alignment with the latch for proper operation.) It may be necessary to drill a hole at the rear of the strike cavity to gain access to the wall space; make it large enough to see into.

If the wall is non-bearing, there might be a straight shot down to the strike location, but there will probably be an obstruction or two. Use the extension or long bit drill through these obstructions. Drop one end of the beaded chain, weighted string or fish tape, down to the area of the strike and fish for it with the magnet on the flexible rod or hook it with a piece of bent coat hanger wire.

Attach the supply wire securely to the pull, pulling the wire up through the wall. From here pull directly to the switch and then to the transformer, or you may go to the transformer first and then to the switch.

After surveying the job and doing the necessary planning, the installation should go rather smoothly but surprises may abound.

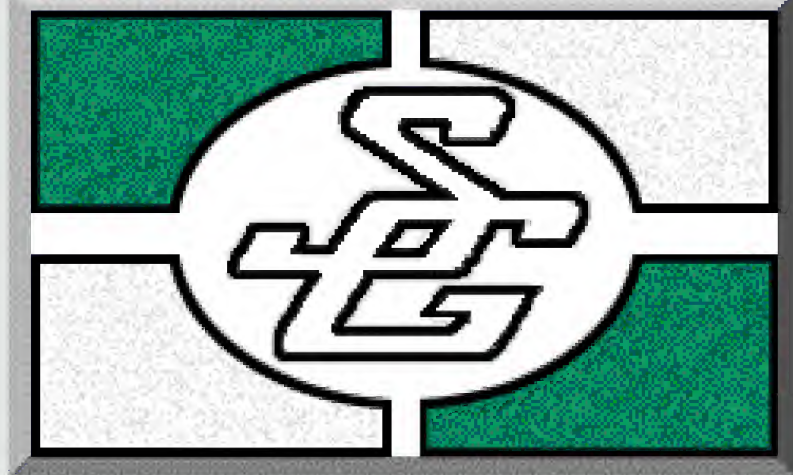
A few general rules to help installation go smoothly are as follows. The transformer and strike voltage should be the same. The transformer VA (watts) should be slightly higher than the VA required for the strike. If a full-wave bridge rectifier is to be used, it is generally best and easier to install it at the transformer. Number 18 wire, solid or strand, can usually be used for most installations. Nothing smaller than 18 should be used.

Solid wire is best to use but stranded wire is easier to pull in many areas. Attach the wire securely to the string, beaded chain or fish tape. A flashlight in the strike area can be helpful in determining if all obstructions have been penetrated. If looking down from the top of the wall the light is seen, the penetration was successful. ■

SRI **SECURITY** **RESOURCES INC.**

***SRI and Tech Train
Productions are the
automotive specialists -
your best source for
automotive tools, manuals,
and videos.***

[Click here for more information](#)



***Choose S&G Comptronic
electronic safe locks for...security...
technology...tradition.***

[Click here for more information](#)

Troubleshooting Electronic Systems

"You want to know where every piece of the system is, and personally try it out. At this time you are looking at the components for obvious wear or damage."



by James Marshall

Most progressive locksmiths have found that basic electrical theory and the right tools for the job proved invaluable when troubleshooting any access control system. When combined with experience, these form a solid basis for accurate and efficient evaluation of access control problems.

First let's look at some of the tools needed to do the job. One word of caution: your preference for types of tools may be different than mine. There is a lot of good equipment available to suit every taste.

Some kind of volt ohm meter is essential. I prefer an auto-ranging digital multimeter, as do most technicians who have used one. Digital is preferred over analog (the kind with a needle) due to the ease with which it can be read, among other things. Auto-ranging is nice because it further reduces the work you must do before the meter will give you the desired information.

An auto-ranging digital meter can be purchased for as little as \$35, or as much as \$400. Radio Shack has a folding unit which will probably do everything a locksmith needs for \$69.95 (it goes on sale a couple of times a year for a little less).

Devising a special set of test leads is also helpful. This can be done by buying alligator clips for the tips of your probes. You may find the slip-on type will pull off at inopportune moments, which is why I cut the probes off of a spare set of test leads and soldered on the alligator clips.

You will also need an assortment of electrical connectors, a pair of crimpers, cutters, and strippers. A soldering gun

is useful, but not necessary. When you splice wire, using these items will make you work look more professional and make more effective joints.

No matter how small or simple this system, you can save time when you have a logical plan of attack. One of the most common and time consuming plans is to check each component, one at a time, until a bad one is found. This is also known as the beat your head against the wall plan. It usually works fine for small systems, and becomes habit after a few successes. The frustration comes when you begin to deal with more and more complex systems. Two or more questionable components "working" together can give strange symptoms.

The plan I use is to survey, then divide and conquer. During the survey stage you try to quickly find out as much as you can from the people that work at the location. You want to know where every piece of the system is, and personally try it out. At this time you are also looking at the components and wiring for obvious defects or physical abuse. The symptoms you uncover can tell you where to divide the system, but there is no set of rules cast in concrete for all occasions.

One objective is to remove from the system as many known good and known bad components as possible, before testing the rest of the system. The other objective is to divide the system and test each half. Find the bad half. Take the bad half and divide it in half. Find the bad quarter. Depending on the situation, this way can be the quickest method for fault isolation.

In our sample system, you pushed on the strike on the way into the office, and found it to be in good condition mechanically. The secretary tells you there is one button under her desk, and it is "broken." You find the power supply plugged in next to her desk. There is no output voltage and it is cold. There is 117 volts at the outlet. At

this point you could hook up a new power supply, but it would be more prudent to first see if there was a problem remaining in the system that might destroy the new supply.

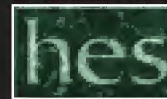
Disconnect the strike and check its resistance. Compare this to the manufacturer's specifications or a "known" good strike of the same make and model. This one reads 200 ohms, and is within 10% of the good one. This is well within the limits of the old supply, so we want to check the wiring for a short. With the strike and power supply disconnected, hook the meter up to check the wiring. It reads infinite resistance, but when you push the switch under the secretary's desk the meter reads 12 ohm.

Now you know to check the wiring between the switch and the power supply, because if there had been a fault between the strike and the switch the meter would have read something other than infinity before and after the switch was pushed. While following the wires, you notice that one of the legs of her desk is sitting on some wires. After replacing the crushed wires, the meter reads infinite ohms whether or not the switch is pushed. Now replace the power supply, re-connect the strike, and test. The probability is good that while you are writing the bill the secretary will tell you "isn't it strange that the door opener hasn't worked ever since the day the guys moved my desk."

The reason the power supply in this case was blown was that once the insulation on the wiring was crushed, it saw a load of 12 ohms at all times. Since $\text{current} = \text{voltage} / \text{resistance}$, $24\text{V} / 12\ \Omega = 2\text{ Amps}$. A power supply rated for 1 or 1.5 amps (plenty for a Rofu or Trine strike) would self destruct before the strike was ever actuated under these conditions.

As for the electrical theory, I suggest that everyone take an introductory class at their local junior college or

Continued on page 98



Electronic



Locking Products

There is quite a variety available to the locksmith in terms of electronic locking products. Such devices as electronic strikes, access control systems, and electromagnetic locks can help you compete with the large security companies. At the same time, your existing commercial accounts can now use your services for their access needs as well.

This product review section displays only an overview of the products currently made available to you. Look carefully through this section and request more information on those items which interest you.

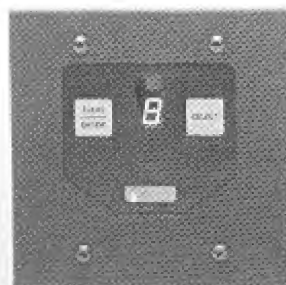
It is also important to remember that many of the manufacturers who make these products conduct training seminars to teach you how to install and service the products. Many of these seminars are free. Contact those companies in which you are interested to find out how you can be trained in the product line. They will be happy to help you.

Also, recall that the various distributors who sell these products can often be a valuable resource for installation and service information. It is clear that electronic locking has found its place in the market. Be sure not to let this profitable area of locksmithing pass you by.

AHCI's New Gemini Keypad

The programmable, new Gemini security keypad from Architectural Control Systems, Inc. provides security, reliability and peace-of-mind in virtually any access control situation.

Featuring numerical scrambling technology, a limited viewing angle and four locking modes, ACSI's new Gemini 1370 keypad combines state-of-the-art technology with affordable convenience to deliver high-quality performance and security.



Circle 230 on Rapid Reply

DoorGuard States Lifetime Guarantee

DoorGuard has announced a lifetime guarantee on their electromagnetic lock 2001.

The 2001 electromagnetic lock has an on board terminal wiring block, AC/DC rectifier, field selectable for either 12 or 24 volts, has zero residual magnetism, surge protector, and 1200 pounds holding force.

The DoorGuard 2001 can be optionalized with LED, bond sensing, power monitoring, door status, and a built in key switch.



Circle 231 on Rapid Reply

Door Systems Inc.'s Thin Door Locks

Of the seven models of the Digital Door Lock's 2000 series, the model 2000 readily adapts to thin door or cabinet installations. The 2200 can be installed for a surface (rim), or mortise strike application on doors from 1/16" to 2 3/16" thick. Featuring an outside turn knob, inside thumbturn, two, four layer laminated stainless steel throwbolts (one 3/8" and one 2 1/4" long), this lock is installed by drilling three 5/16" holes.

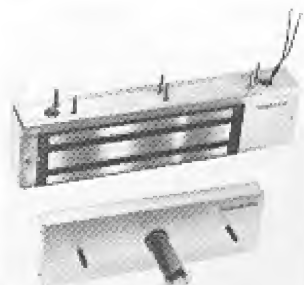


Circle 232 on Rapid Reply

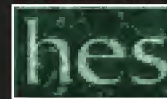
DynaLock's New Electromagnetic Lock

The #3000 Series electromagnetic lock from DynaLock Corp. offers a certified 1500 pounds holding force magnet mounted in a one-piece aluminum housing that slides into position on a unique Tee-Track with no visible mounting seams or screws.

The advanced coil and circuitry design accepts 12/24 AC/DC input voltage, built-in spike suppression, lock/door status indication and is available in popular architectural finishes and custom housing that span an entire opening.



Circle 233 on Rapid Reply



Vandal Resistant Locks From ELS

For those installations requiring a very high vandal resistance, the MED500 series extra heavy duty exit paddles/push buttons from Magnetronics are designed for use as station controls in actuating fail safe and fail secure locks and in other electrical systems requiring low voltage normally open or in normally closed momentary switching.

Features DPST switches to increase reliance and provide a measure of confidence that a system will work as intended.



Circle 226 on Rapid Reply

Electric Lock Supply Company

Electric Lock Supply is a national wholesale distributing company for the access control and peripheral hardware market. They also have consultants that can assist you with technical advice as you need it. They offer one stop shopping for the electronic access control market. As a volume company, prices are determined by how much a company purchases. The more product purchased, the more of a discount is offered.

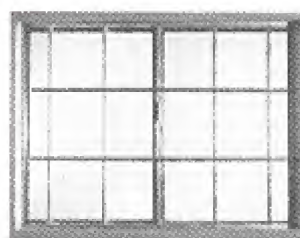
They have a large supply of products for your convenience, such as Security Door Controls, Securitron, Folger Adams, Adams Rite, and much more.

Circle 227 on Rapid Reply

G.R.I. Telemark's Window Protection

Unigard Window Protective Systems from G.R.I. Telemark are a unique protective set of window bars that have an alarm device to detect intruders but are also easily and quickly removable in case of fire or other danger. They can be wired to the 24 hour zone at the panel so windows can be opened or closed with the alarm on-with no false alarms.

The classic look of French windows gives 24 hour protection are supplied in kit form for quick assembly or bulk length for custom applications.



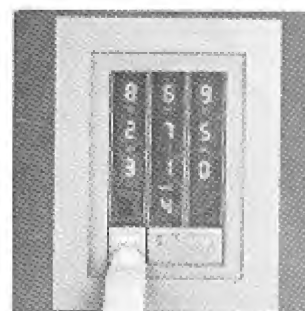
Circle 228 on Rapid Reply

Hirsch Updates ScrambleLock

Hirsch has recently updated its line of ScrambleLock Digital Access Systems.

The SL24+ includes the capability to control one or two doors for up to eight user codes. Each code can be assigned to an individual user or to a group of users with the same access authority.

The SL24+ also includes an internal clock/calender which enables the security manager to restrict access to the building during specified time periods of selected days of the week.



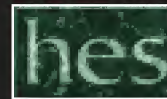
Circle 229 on Rapid Reply



STRATTEC™

The world's largest producer of automotive locks and keys.

[Click here for more information](#)



LSE's Heavy Duty Pushbuttons

Locknetics Security Engineering introduces the 601 and 602 Series heavy duty pushbuttons designed to withstand high use applications.

Moving parts are of hardened steel, with positive stop action to prevent stress or overtravel of switch components. Pushbuttons are available in single gang unit 601, or narrow style 602 series for installation on 1 3/4" narrow style frame applications.



Circle 222 on Rapid Reply

No. Computers' Custom Keypad

Northern Computers, Inc. has recently announced the development of a keypad that actively admits access with an issued number sequence, eliminating the need for carrying cards or issuing keys.

Immediate delivery now available, the KP-9 keypad provides complete security while maintaining convenience for the client. Programmed number sequences are stored in the keypad, and access is admitted only when the correct sequence is entered.



Circle 223 on Rapid Reply

OSI Security's Doorlock

OSI Security Devices has expanded the OmniLock™ brand of computerized access control doorlocks to include handicap-lever, interchangeable core, and mortise-lock configurations for a variety of on-the-door installations.

Each OmniLock records the date, time and identity of 250 entrants through the use of individually assigned user codes, and provides for daily time scheduling of access levels. A handheld wireless printer is used to retrieve a 250 record audit log or to program an OmniLock with updated user and time schedule information.

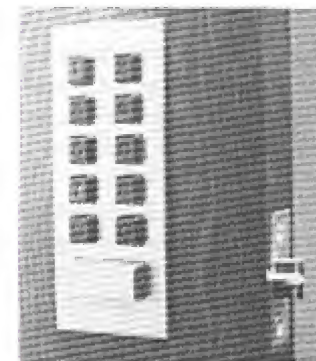


Circle 224 on Rapid Reply

Preso-Matic's 8200 Series Locks

Preso-Matic offers keyless mechanical push-button combination door locks with a hardened steel deadlatch spring bolt. They lock automatically when a door is closed, and unlock from the exterior only when the correct combination is pressed. The four number combinations offer 10,000 possible combinations and seven number combination locks offer 10,000,000.

These locks allow instant one button exit from the interior by pressing a steel unlock button.

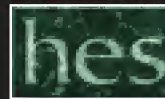


Circle 225 on Rapid Reply



HPC has it all:
Key Machines, Software, Books, Car
Openers, Pick Sets, Tools, Door Guards,
and Key Cabinets

[Click here for more information](#)



Optex OP-07 Access Door Sensor

The OP-07 series of P.I.R. detectors are designed for access control, automatic door operation and home or commercial automation.

Optex has designed an exclusive feature called Bi-Tec Sensing. This special circuit eliminates false alarms by sensing the temperature within the detection area and automatically adjusts the OP-07's sensitivity.

The slim OP-07 mounts above the door and has separate adjustments for sensitivity, area angle (4 positions) and width (5 positions).



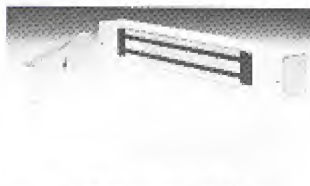
Circle 218 on Rapid Reply

Rixson Presents Slim Lock

The Rixson-Firemark TigreLok electro-magnetic locking device is the slim-mest, most aesthetic device yet designed to legally lock egress doors, according to the manufacturer.

The TigreLok 1700 Series keeps doors locked with 1,200 pounds of holding force. Locks in the series have a low-profile design that allows architecturally pleasing appearance and easier installation.

The devices provide safe, positive, instantaneous door control. They are ideal for use in schools, hospitals, hotels, warehouses, and auditoriums.



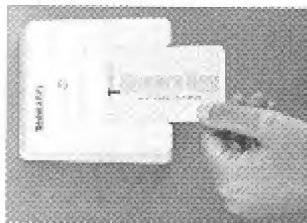
Circle 219 on Rapid Reply

Secura Key's Entracomp 26SA

The Entracomp 26SA is a self-contained card access control system that utilizes state-of-the-art electronics, providing a unit that is both inexpensive and fully programmable.

The patented slotless Touch Card reader is protected from weather and vandalism. Simply place the card on the stainless steel touch plate and the card is read instantly and without error.

The Entracomp 26SA has non-volatile memory.

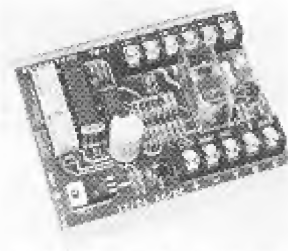


Circle 220 on Rapid Reply

The TimeMaster From Securitron

The Securitron Model TM-1 is an industrial quality multi-function timer with a unique array of features to serve the security industry. The TimeMaster allows the dealer-distributor to standardize on a single timer for virtually any delay timing requirement where odd or exacting times of delay are desired. This timer simplifies both purchasing and service.

The TM-1 has five switch selectable operating modes: on delay, off delay, cyclic, pulse generation, and toggle.



Circle 221 on Rapid Reply



SCHWAB CORP.

Fire protection for your vital records.

**Free freight!!
No middle man!!**

*Click here
for more
information*

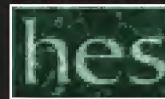
NATIONAL

AUTO LOCK SERVICE, INC.

National Auto Lock Service, Inc. offers a wide range of equipment and services for the Automotive Locksmith. From tools and hard to find key blanks to transponder

programming, we can take the mystery out of car service. We accept credit card orders, and can ship COD. Contact us for the latest in automotive technology.

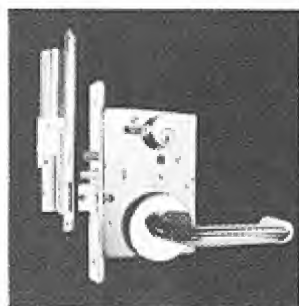
www.laserkey.com



SDC's HiTower Patented Locks

The unique UL Listed HiTower locks, patented by Security Door Controls, find many applications in commercial, industrial and technical fields, wherever their dual functions are advantageous or required by code.

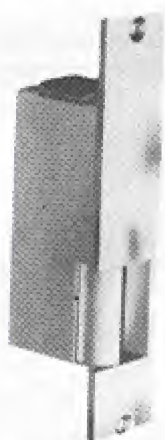
The HiTower electric controller installs in a 1 3/4" frame, 1 1/4" or 1 1/2" frames optional. The heavy-duty mortise lock may be any of the major locks: Schlage, Arrow, Falcon, Yale, Corbin, Sargent, or Russwin. Nine different functions are available.



Circle 217 on Rapid Reply

Trine Presents New Strike Kits

Trine Products Corporation has introduced four new electric strike kits. The new 020 kit contains one #001 strike with one #122B transformer. The new 021 kit contains one #001 strike with a 16 volt-10 watt plug-in transformer. The 023 kit contains the durable 1001-2B strike with a 122B transformer. And the 024 kit has an 005 strike with a 122B transformer.



Circle 216 on Rapid Reply

Yale Introduces Cardcode™ System

Yale Security Inc. has introduced the Yaletronics Cardcode™ electronic locking system for commercial and industrial facilities providing an economical means of building security.

This new office security system offers the flexibility to program locks for normal and high security operation, with each lock having the capability of recognizing up to 150 magnetically encoded cards.



Circle 215 on Rapid Reply

ACSI Electric Lock Modification

Series 1500 lockmods from Architectural Control Systems, Inc. (ACSI) enable distributors to minimize modification costs on virtually any lock and provide state-of-the-art access control.

These lockmods are suitable for any door access situation and offer fail safe and fail secure control modes to ensure reliable access control and security and are fully guaranteed. They offer cost-effective and convenient alternatives to manufacturer modification.



Circle 214 on Rapid Reply

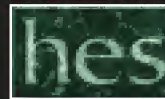


LOCKMASTERS
SECURITY
MANAGEMENT

TM

[Click here
for more
information](#)

Providing quality
tools, parts, and
service for
the security
professional.



Hirsch Updates Software Package

Hirsch Electronics has released a major update to its S*NAP2 software package.

The S*NAP2, Scramble-Net Applications Pack, software package, enables an owner to network up to 64 Hirsch Model 2 or Model 8 Digital Security Systems together for access management of a large facility or of any number of remote sites. The software runs on an IBM PC or compatible.

S*NAP2 enables central programming of each system on the network as well as a central recording of all events in an historical log file on the PC's hard disk.

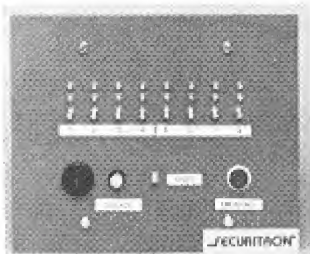
Once recorded the history log can be searched, sorted and a printed report generated of all activity by user, door, time and date, and more.

Circle 210 on Rapid Reply

Securitron's LCP Series

The LCP Series panel is designed to control and monitor any DC electric lock or strike that operates on 12 or 24 VDC (fail safe or fail secure). The four panel configurations available give you "custom" flexibility when ordering any lock control panel for your installation.

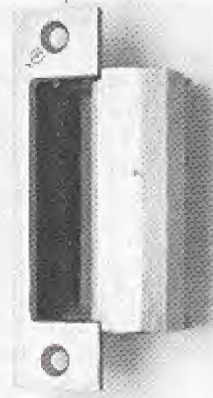
The LCP is delivered standard in a slope front desk mount console; optionally, the LCP may be ordered in a Nema 1 hinged wall-mount enclosure with key-lock; in a flush-plate with knockout equipped back-box; or in a 19" rack mount face plate.



Circle 211 on Rapid Reply

Electric Strike Line From SDC

Security Door Controls completes a full spectrum of electric locking devices with 11 models of heavy-duty UL Listed electric strikes. They fit the standard ANSI cutout, release almost all known locksets, including locks with latch-bolts, 1" throw deadbolts, mortise locks, panic exit devices, unit locks and cylindrical locks. They are stainless steel, and reversible. The solenoid is sealed within the strike.

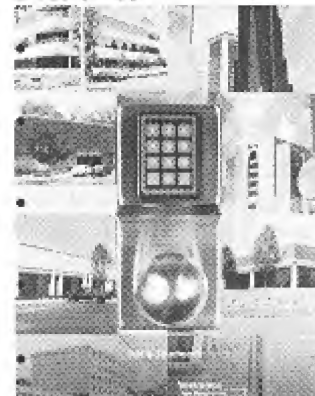


Circle 212 on Rapid Reply

Yaletronics Debuts Touchcode® Book

A new four-page, four-color brochure detailing Touchcode® keyless electronic access system has been introduced by the Yaletronics division of Yale Security Inc.

The brochure highlights features and provides technical and application information on this self-contained, battery-powered, keypad unit which combines the security of a mechanical lock with the versatility of electronics.



Circle 213 on Rapid Reply

medeco
HIGH SECURITY LOCKS

**Integrity.
Ingenuity....
security solutions.**

[Click here for more information](#)



**ASP - Your Auto Service
Center for the World**

[Click here for more information](#)



Dale Battles Pittsburgh

"I then proceeded to turn the dial while I put a little pressure on the opening handle. I did not feel any dial pressure or drag, as I should have."



by Dale Libby

One of my favorite challenges is to be called to work on a "new" brand of safe. I want to attack it in a logical manner. By not looking it up as soon as I get the job, I go out and see exactly what I can do from scratch and hopefully not make too many mistakes.

Recently I was called on to open a double door Pittsburgh Safe and then

make it inoperative. It was going to be used to store welding rod and other articles that did not need to be locked up, but rather stored in a convenient location. The customer and I set a fair price. I was getting the dial, ring, and locking mechanism as part of the bargain.

Arriving at the job site, I usually survey the safe first, before touching it. Looking at the dial, I saw it was a Sargent and Greenleaf lock with "Pittsburgh Safe" embossed on the dial ring. There was a blank area between 100 and 20 to compensate for the "forbidden zone," and a star acting as the dialing index. (See photograph 1.) It seemed to be a three wheel S&G lock, with the



1. The Pittsburgh dial and ring.

last turn "Right to Stop." Wrong!

I then proceeded to turn the dial while I put a little pressure on the opening handle. I did not feel any dial pres-



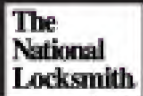
**We have it all.
Quality,
Value,
& Service.**

[Click here for more information](#)



**The Innovation You Expect, with
the Flexibility You Need!**

[Click here for more information](#)

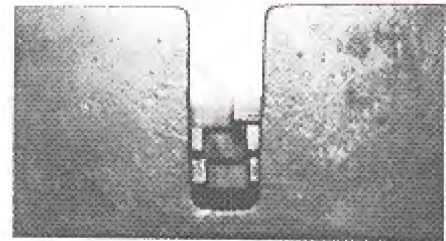


sure or drag (as I should have), because my turning pressure on the handle was too slight. I do this as matter of habit, but this time I missed the obvious. I assumed since this lock was an S&G lock, the wheels would not be affected by handle turning pressure. But in reality, as I found out later, with enough pressure exerted, the wheels were affected.

At the start of my safe opening career, the drilling procedure was always to drill outside the dial ring and angle in from above. Take the reading received, and transfer the reading to the appropriate opening position, determined by the drive cam pick-up

procedure. This sounds good in theory, and since I did not want to ruin this rather unique dial and ring, I took this approach.

Picking my spot for penetration, I drilled at one o'clock with a very shallow angle drill, approximately 10 degrees down. From the look of the safe, I assumed it was made before the turn of the century, and considering my past experiences, I knew the door would be very thick, and the lock extremely far back in the door. The first hole I drilled was perfect. At about 6 1/2" back, I entered the lock case proper above the wheels, and inserted the borescope to yield a perfect view of all three wheels

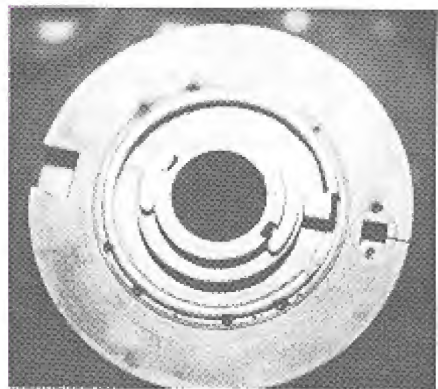


2. Gates in the wheels as seen from the bottom of the lock.

and the drive cam. (See photograph 2.)

I determined the numbers of the combination swiftly, and then took a look at the drive cam. When I look at the drive cam in a lock, I notice the number on the dial. I then transfer the cam to the drop-in position and see how many numbers the cam gate is off from the hole I drilled. I add or subtract this number from the relative combination to get the actual combination. This method works well, making most openings easier and faster.

Looking at the dial, I assumed the drop-in would be between 100 and 20, hence the blank area. Well, I was surprised when I looked through the borescope and saw the drive cam without any gate or cut out at all. The drive cam was still round, with a bump on the outside of the cam, and on the inside the drive pin, but there was no cutout at all to gauge drop-in position. (See photograph 3.) Not only that, but looking hard, I could not see any lever, (which I was expecting because of the S&G lock and dial), or anything else that would account for the workings of the mechanism.



3. Third wheel of the lock. Note hub alignment mark and pin punch marks on hub and inner wheel.

If the drive cam had no cut out, it could not be part of the combination. Its only function was to turn the wheels of the lock. There was no right-to-stop motion, and most important, there was no forbidden zone. To make matters worse, I had no information in my books on the Pittsburgh Safe. (See photographs 4 and 5.)



HPC, Inc.
Designing Excellence and
Manufacturing Quality
since 1956

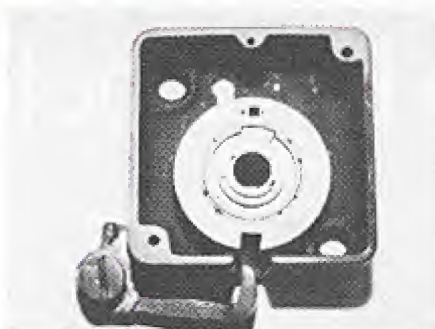
[Click here for more information](#)



4 and 5. On the left is the outside view of the drive cam. On the right is the inside view with the stationary fly.

I got on the phone and called Little Tommy Powers to talk about the problem. He said he would look it up and see what some of the Old Masters might have to say about it. About the time he found the answer, I had figured out the secret too.

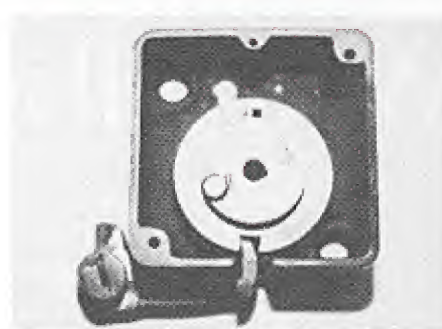
The safe was a direct drive type safe, not like Sentry, but similar to some early Herring-Hall-Marvin safes that used the bottom bolt bar to push up a lever from the bottom of the safe into the wheel pack proper. (See photograph 6.) I did not have to know the exact position. By putting maximum pressure on the opening handle, I got a good reading on the third wheel. Remember, the drive cam had no cutouts, so the reading received was a combination number.



6. Lock in unlocked position. Lever action is similar to HHM safes.

Two minutes later, the safe was open. This lock case appeared interesting to me. It had a cut out in the bottom of the case for the lever to go in. Unlike some HHM units, the lever was to the left of the case at dead center bottom. If I had known what the lock was beforehand, I would have tried manipulating the safe open. When I first tried to manipulate the safe before drilling, I could not find the drop-in point. This is why I drilled. (See photograph 7.)

Apparently at one point, this safe needed repair. The third wheel was staked into position by several pin punch marks making rotation impossible. The key change combination hub was also staked to prevent wheel slippage. Each wheel was numbered from

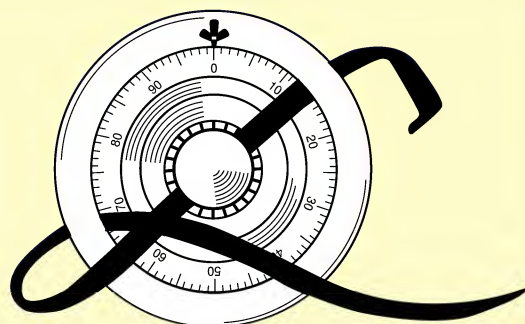


7. Lever forced into wheel pack.

one to three, with hub alignment marks to show when the wheels were correctly locked into position; the same as on current key change wheels.

I learned several things when I opened this safe, but the most important concept I learned is to "take nothing for granted." Just because a safe has one type of dial or ring, do not assume all safe opening methods are correct for that safe. Put pressure on the opening handle to check for wheel pressure or drag. Do not think there will be no pressure and make sure you find it.

This opening was easy, no hardplate, no repair, no problems, and it did make me think, instead of just looking up the answers and opening by routine. Open and prosper! ■



**Lockmasters has a
44 year history of
training security
professionals.**

[Click here for more information](#)

Major
MANUFACTURING, INC.

Installation Tools
The Professionals Choice

[Click here for more information](#)

Confucious Say...

On The Lighter Side

"Who would believe that destiny could lie curled in the center of an almond flavored confection? Nevertheless, there it lay, waiting in the palm of Don's hand."



by Sara Probasco

For many years, I owned and operated a gourmet catering service. Although I sold that business long ago, I still find it difficult to pass up an opportunity to throw a party. For example, when Don and I learned that the Chinese New Year occurs in February, we decided to invite some friends

over to celebrate. It was a perfect time of year for entertaining. The harsh winter weather which followed our usual holiday season had everyone suffering from "cabin fever," so the idea blossomed into a welcome diversion for all.

Following a dinner of various oriental delights, I served a Mai Tai sorbet and fortune cookies. Who would believe that destiny could lie curled in the center of an almond-flavored confection? Nevertheless, there it lay, waiting to emerge into the palm of Don's hand. He broke the delicacy open with a crunch and extracted the imprinted strip of paper from its folds.

"Aha!" he exclaimed. "Listen to this. A new business venture will unlock

hidden treasure. What did I tell you?"

Now, to some, that message might have meant the advent of some great archeological find, or the discovery of some forgotten pirate's chest. To my husband, however, it was irrefutable reinforcement of the decision he had already made. He was determined to give up the sales business and follow his dream of becoming a locksmith.

Nearly 10 years have passed since we first approached the symbolic door behind which lay the predicted treasure-trove, and we are still trying to pick the lock that seals our fortune. That fact, however, has not diminished our delight in fortune cookies.

On Wednesdays, I leave the shop at

medeco
HIGH SECURITY LOCKS

**The market leader
in locking systems
for security, safety,
and control.**

[Click here for more information](#)

NATIONAL
AUTO LOCK SERVICE, INC.

National Auto Lock Service, Inc. offers a wide range of equipment and services for the Automotive Locksmith. From tools and hard to find key blanks to transponder programming, we can take the mystery out of car service. We accept credit card orders, and can ship COD. Contact us for the latest in automotive technology.

www.laserkey.com

noon and go home to write. Don and I use this as an excuse to have lunch together at a little Chinese restaurant across the street from our shop. At the end of the meal, we linger over tea and fortune cookies before going our separate ways.

The little slips of paper often wind up on our bulletin board, and our collection of sayings has become quite interesting. (Although we sometimes wonder about these predictions.) For example, one day last month my fortune stated, "Things may not turn out as badly as you think." How would you like to start your afternoon with that cheerful thought?

I must admit that I have heard of worse. "Hurry home. Your best friend is having an affair with your wife," appeared in the cookie of a friend at a recent party. "Be cheerful. After all, there is more to life than prosperity," was in another. Great party.

The fortunes we save are often more generic in nature, sometimes requiring interpretation. For example: Pray for good harvest, but continue to hoe. (Translation: Just because it looks like a good month coming up, that doesn't mean you can afford to get lazy.) Let words remain smaller than actions. (Translation: Don't let your mouth overload other parts of your body.) When arguing with a fool, be certain he is not similarly engaged. (Need I explain?) We have found that there are appropriate sayings for all occasions in life.

Our interest in the Chinese recently went beyond the weekly lunches and fortune cookies. We decided to have another party. Having purchased a murder-mystery game entitled "Hu Hung Woo," we invited three other couples to join us for an evening of food, fun and mystery. Everyone came in costume as befit the character which he or she had been asked to portray in the solving of the make-believe crime.

I carefully braided black panty hose into a pigtailed wig for Don and created Oriental eyes and a long, drooping mustache and beard with the help of latex, fake hair, and make-up. Dressed in a loose, embroidered "happy coat," he looked every bit the ancient Chinese sage. Our guests dressed in a variety of appropriate costumes. One rented a Chiang Kai-shek military costume, complete with red and gold epaulets and horn-rimmed spectacles.

It was "General Chiang" who accompanied Don on the inevitable midnight service call. They climbed

into Don's service van and hurried to the all night cafe where an elderly woman had locked her keys inside her vehicle.

As fortune would have it, the lady was a native of our city who knew practically everyone in town. After scrutinizing the two men suspiciously for several minutes, she said, "I don't believe I've met you gentlemen before. Do you live here?" Don claims they kept reasonably straight faces as he smiled and nodded, working furiously to get into the car in record time. He never told her his name. (Confucius say, "To save face, keep part of it shut.")

Those of you who offer 24 hour service are well aware of the fact that locksmiths, like doctors, are often called out at odd hours and under unusual circumstances. The calls are not always what one would expect. For instance, there was one locksmith who told of the time an acquaintance called for help after hours. He instructed the locksmith to come to the top of a certain office building.

Supposing that there was a malfunctioning lock on a door which led to the roof, the locksmith hurried over to see what he could do. When he arrived,

Continued on page 98



SCHWAB CORP.

Fire protection for your vital records.

**It's not safe
unless it's
Schwab Safe.**

[Click here for more information](#)

From one locksmith to another!

Locksmiths using code books from *The National Locksmith* tell you what they think.

Mike Churchman
Arrow Lock & Safe
California



"We used to have a pile of code books in assorted sizes and colors before we bought our Code Books from *The National Locksmith*. These books are very accurate. You look in the index and your code is right there."

"We use our code books quite a bit. We've been in locksmithing for over 15 years and this is our first good, organized code book system. Our old system was a mess. *The National Locksmith* book format is excellent. It's a good size book to use, not like those smaller ones. I would definitely recommend these books."

Vance Mabry
Farmington Safe & Lock
New Mexico



"I especially like the reference to the proper 1200 CM code card to use. That is really a big help and a time saver. It used to take me much longer to find the correct code cutting information."

"Finding the proper codes in my books from *The National Locksmith* is really easy. The dual index is very helpful. The books list the codes by manufacturer as well as by series. That is a tremendous time saver."

Tim Smith
Anchor Security Locksmith
New Jersey



"I think the code book system from *The National Locksmith* is great because of the annual update. And you get updated from the codes printed in the magazine also. The code books list several different key blanks you can use for each code. That makes it easier for my employees because I don't always buy one brand of key blank."

I also love the index system. Lots of times I look up a code by the name of the company that made the lock—that narrows it down for me. I'm really happy with my code books from *The National Locksmith*. I use them all the time. I have already recommended these books to my friends."

Joe Cayer
Cayer Locksmith
Maryland



"I just purchased a set of your code books. I think they are the best I have seen. I have purchased code books from Reed, Baxter, Ryan, etc. None can equal yours for all around quality."

Robert Wyman
Wyman's Lock & Key
New Hampshire



"I have been very impressed with my code books. I seem to have many codes that my friends do not have in their books. Also, the Code Hotline has been very helpful. Every time I have called, they have given me an immediate answer, right then and there. That is a real time saver."

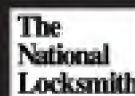
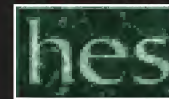
"These books are so much better than the ones I used to use. Do you know what I did with my old code books? I gave them away to a friend of mine who couldn't afford a set of his own. I will be purchasing the rest of *The National Locksmith* library soon."

Vernon Scott
Scott's Lock & Key
Michigan



"The foreign car code book set is super! I'll be buying more of the other books soon. Before I bought my code book from *The National Locksmith* I wasn't doing many foreign cars. I used to shy away from them. But now all I have to do is look up the code. The book even helps me find the right blank, and it's easy to cut them."

"This will definitely help my business. I don't have to turn down jobs any more. And I'm not afraid to tackle foreign cars now. I used to be apprehensive, but not now."

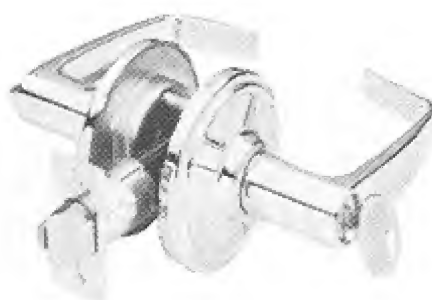


The Kwikset Leverset

"A new heavier U.L. listed latch bolt is the first thing you will notice about the Leverset. It is $\frac{7}{8}$ " diameter with a full $\frac{1}{2}$ " of throw."

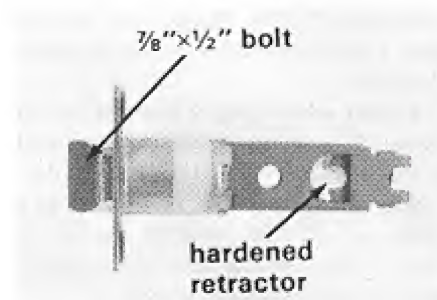
by Robert Sieveking

Though the full impact of the user serviceable trend in the locksmith industry is not yet fully developed, the need for fast inexpensive key changes on light commercial locksets is pushing the manufacturers to satisfy the need. The Kwikset lever lock answers a number of the special needs of today's modern contract hardware supplier. (See photograph 1.) The lever design is addressed specifically to the new codes that require special access to the handicapped. The locksets can even be ordered with special extra large rubber head keys to meet specific handicap codes. The removable core type cylinder



1. The Kwikset LeverLock.

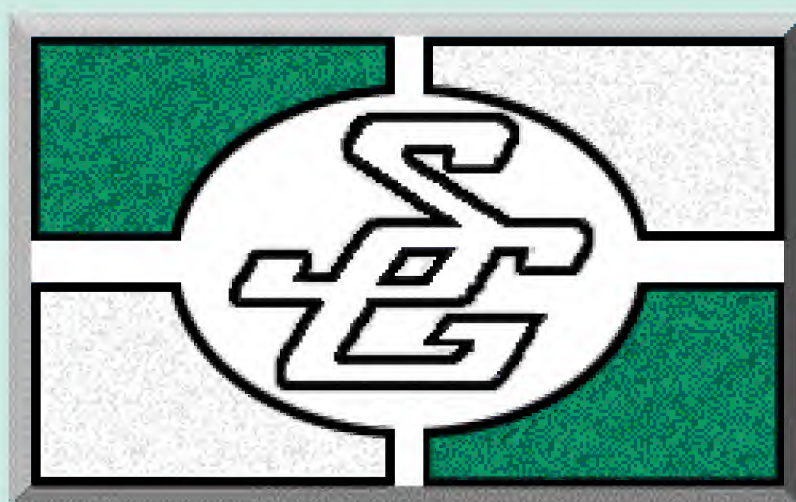
addresses the demand of the end user to make key changes a function of semi-skilled maintenance personnel. "Leverset" answers the market with a product designed to be competitive in the light



2. New heavier $\frac{7}{8}$ " \times $\frac{1}{2}$ " bolt with a hardened retractor.

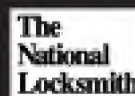
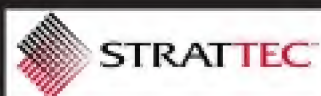
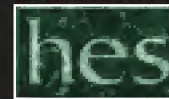
commercial and multi family residential market.

A new heavier U.L. listed latch bolt is the first thing you will notice about



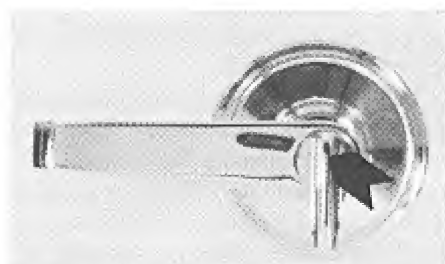
**Make Sargent & Greenleaf's
Comptronic locks your choice for
electronic safe locking solutions.**

[Click here for more information](#)



the Leverset. The Leverset latch shown in photograph two is a full $\frac{3}{8}$ " diameter, with a $\frac{1}{2}$ " throw. The retractor mechanism has been hardened to increase its strength and give it a longer useful life. The new bolt is reminiscent of the Kwikset bolts you may be used to, but plainly a heavier, better built unit. The latch is fully reversible for left or right hand operation.

The new lever style turn button, which locks the outside lever, is an improvement over the simple turn button. As you can see from photograph three when the door is locked, it is plainly indicated by the position of the lever. The turn button has a spring detent built into the lever handle, that has a nice solid feel when it is locked or unlocked. Both levers operate independently, with only the outside lever being lockable. This provides for panic



3. Leverset shown in locked position.

free exit operation.

The cylinder of this new lockset is the heart of the design. The cylinder is removed and replaced without the use of tools. A special "cylinder removal key" is used to remove and replace the cylinder. The Leverset uses a six pin brass cylinder, with the plug retained in the cylinder by a specially shaped "C" clip that does not rotate on the plug.

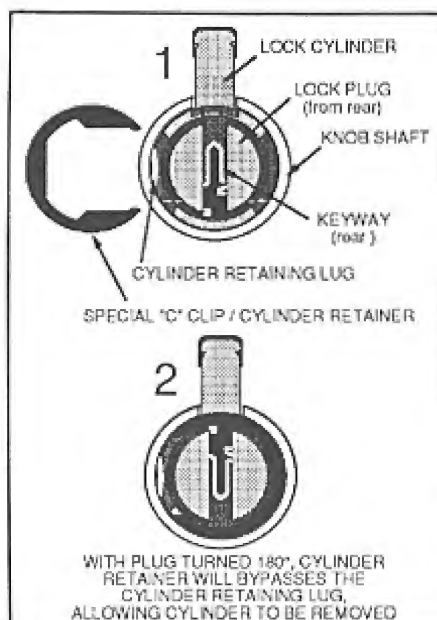


Illustration 4

The ring groove at the rear of the lock plug is squared to prevent the retainer from rotating, as shown in illustration four. Notice that the inside of the "C" clip is squared.

Illustration four also shows the second function of the "C" clip, which is to retain the "lock cylinder" in the "knob shaft." The knob shaft has an embossed "cylinder retaining lug" on the inside of the shaft. With the lock cylinder in the normal position, the "C" clip or cylinder retainer will be behind the cylinder retaining lug, preventing the cylinder from being removed. With the plug turned 180 degrees, as you see in part 2 of the illustration, the opening in the retainer will be over the retaining lug, bypassing it and allowing the cylinder to be removed. The last function of the retainer is to lock the lever onto the knob shaft. One "C" clip holds the whole works together. Bravo! for simplicity.

Photograph five shows the lock cylinder from the side. Notice the cut-out in the side of the lock cylinder shell. When properly seated in the knob shaft, the cylinder retaining lug will be captured in the cut-out by the cylinder retainer. The plug is turned 180 degrees in the photograph, to show the opening



STRATTEC™

*It's your
reputation.*

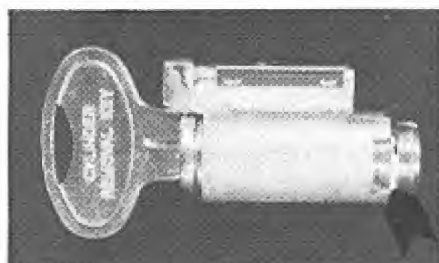
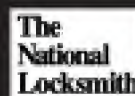
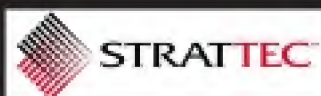
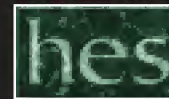
*Trust the
original.*

[Click here for more information](#)

SRI
SECURITY
RESOURCES INC.

SRI and Steve Young
are working together
to bring you the best
in locksmith tools
and supplies.

[Click here for more information](#)



5. Lock cylinder viewed from the side.
in the "C" clip/retainer.

Why doesn't the operating key turn the cylinder far enough to disengage the plug retainer? The length of the operating key is not sufficient to push back and disengage the locking actuator. The cylinder removal key shown in photograph six is a full 5/16" longer than the operating key. When the removal key is in the cylinder, it pushes the locking actuator blade back, freeing it to turn without the limits of 90 degrees either direction. The actuator blade is disengaged at this point and is



6. Special cylinder removal key.

free to rotate 360 degrees without locking or unlocking the lockset.

Though it may be possible to use a


Weiser shim pick to release the cylinder, it is recommended that a working key be cut on a cylinder removal key to remove the cylinder.

This lock is obviously designed to be a part of a masterkey system. The master biting, cut over a "cylinder removal" blank, would be used to change (remove and replace) cylinders. To combine these locks to separate set keys without a master, would require that a cylinder removal key be made for each lock. The cylinder removal key is "required" to remove or replace the cylinder. If called to rekey a leverset lock, you will need to either use a customer's removal key or make one before the cylinder can be removed. After recombining the cylinder, you will need a removal key to replace the cylinder in the leverset.

If called to a lockout, the lock should be picked left to unlock the lock. After turning the cylinder 90 degrees, insert a pick into the rear of the plug, and push in to free the actuator blade, while turning the cylinder another 90 degrees. The lever and cylinder can then be removed. Make a first key in the usual manner and make a cylinder removal key to replace the cylinder.

The leverset is a good sturdy lockset. It meets the needs and demands of a specific market, in a very competitive manner. The leverset fills an important need, by providing a reasonably priced lever lock that is light commercial, meets all the handicap access codes, and can be masterkeyed.

As an added note, Lori is making conversion cylinders for the leverset that will allow the locksmith to key these locks into a number of other keyways. ■



ASP Covers the World of Auto Locks

[Click here for more information](#)

Mazda And Probe Service

"To take the ignition off the column you remove the shroud, unplug the ignition and back off the break away bolts that are securing the lock to the column."



Send your car opening questions to: Shirl Schamp, The National Locksmith, 1533 Burgundy Parkway, Streamwood, IL 60107.

by Shirl Schamp

The same company that provides Mazda with its ignition locks also provides locks for the Ford Probe and Festiva, by using the same key blank and code series.

If you are going to make a key for a Mazda or Ford Probe do not work from an ignition unless the ignition does not match the other locks. This happens when some amateur replaces the ignition without bothering to match it to the existing key.

Use a door lock to make a key if you don't have a code number. The correct blanks to use are: Silca MAZ17 and Silca MAZ 13, MZ-15 (Curtis) and MZ-16 (Curtis).

The first thing to do, to be able to service the locks is to purchase service packages. (See photograph 1.) This is the Mazda ignition lock service package for "SL-10" style ignition locks. The package contains a replacement face, a plug, a rocker arm for the buzzer, a buzzer activator, a retainer, a large and small spring, and a replacement plate. (See photograph 2.)

To take the lock off the column you remove the shroud, unplug the ignition and back off the breakaway bolts that are securing the lock to the column. There are numerous methods on how to back these off. By using the punch to bite into the bolt, you can keep the bolt from rotating with a minimum amount of difficulty.

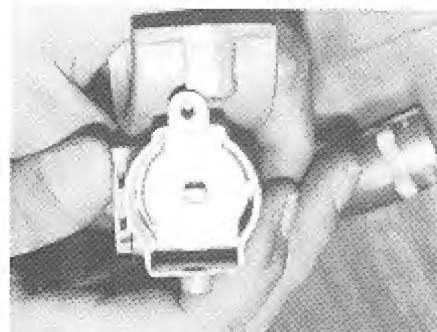
After the lock has been removed from the column along with any connections you can look into the back side of the lock. (See photograph 3.) Since the back plate is crimped in place, the crimped sections will have to be removed from one side. (See photo-

graph 4.) Remove the various parts in a systematic order being careful not to let them explode. (See photograph 5.)

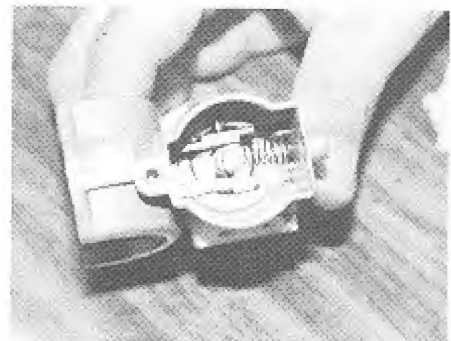
The plug should come out easily from the rear when you use a puller or a slap hammer on the lock. This plug is not secured into the housing very well. Basically, the only thing securing it is a small node at the rear of the cylinder which easily snaps off. (See photograph 6.) The positive effect is that it breaks easily, not enough to damage the ignition unit.



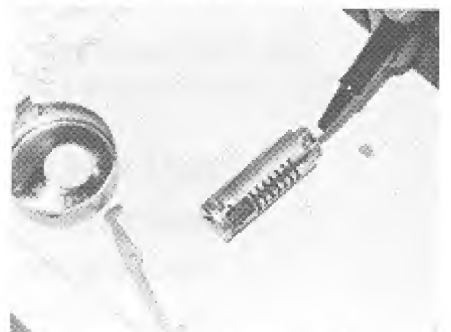
1. The service package enables the locksmith to service Mazda "SL-10" locks.



3. The backside of the lock is noticeable after being removed from the column.



5. Removing the parts of the lock.



6. The small node securing the plug is fragile.



2. The containments of the service package.



4. The crimped sections of the back plate.



7. Empty housing from the lock.



SCHWAB CORP.

Fire protection for your vital records.

Free freight!!

No middle man!!

[Click here for more information](#)

Locksmiths/Manufacturers Help Community Project

by Julie Hill McCluney

The Ronald McDonald House, a long awaited community project, has recently opened in Orange County, California. Nationwide, the non-profit Ronald McDonald houses provide a welcome "home" for families of seriously ill young people who need to be close to their loved ones during times of much needed medical treatments.

One may ask—what does this have to do with locksmiths? Well, many of your fellow lock manufacturers, distributors, and servicemen have unselfishly contributed a great deal to make this very special dream a reality.



Group photo of CLA members.

It started a couple of years ago when our company, Hills Bros. Lock and Safe, was called out to repair locks at one of our client's locations, a McDonald's restaurant. The owner, Marc Widdicombe, approached me and asked if I had any "connections" in the lock and hardware community. "Yes," I replied. "What do you have in mind?" Marc told me of his goal to establish a Ronald McDonald House here in Orange County.

After many phone calls and letters, I am proud to say that our industry has donated over \$25,000 in materials and time. The Schlage Lock Company donated over 100 Olympiad handicap locksets. LCN donated a majority of the door closers for this 21 guest room, three story Victorian house. The California Locksmiths Association volunteered 33 of their members, who donated over \$5,000 worth of services by installing the donated hardware. Other companies donating products and services include: Orco Door Closers, Door-O-Matic, the W.H. Steel Co., Security Door Controls, Securitron Magnalock Corp., Clark Security Products, Major Lock & Supply, and American Lock & Supply.

Thanks to the generosity, caring and commitment of many people and organizations, this is the first Ronald McDonald House ever to open without a mortgage. ■

The Roving Editor

"The guys at Broward Century Lock were ready for me. I thought I'd spend the day behind the counter observing, but they had other ideas. So I spent the day in a van."

by Marc Goldberg

Playing the role of roving Editor has its advantages. A couple of months ago you might remember that I traveled to the frozen tundra of Toronto to write an article about a locksmith wholesaler. I had a good time on that trip, but this month, I told myself I deserve to go someplace warm. I had visions of soft breezes and swaying palm trees in my head. Someplace like...

Deerfield Beach, Florida, home of Broward Century Locksmiths, a modern, well-run locksmith business owned and operated by my friend Brad Volpe. Brad has called Florida home for better than 15 years now and his



1. An overview of the shop shows plenty of counter space with lots of stock and impulse items for sale. A good amount of signage helps promote various products.

shop has been established for a good chunk of that time. What better way for me to enjoy a little warmth? I booked passage for south Florida and with only a couple of days notice, showed up at Broward Century Locksmiths. The guys were ready for me.

As I walked in the front door, Brad tossed me a company polo shirt printed with the business' name.

"Gee thanks," I said. "This shirt will make me look just like one of the guys while I sit behind the counter and observe."

"Guess again," Brad chuckled. "You're going out on a truck with Bruce. It's about time you got a refresher



LOCKMASTERS
SECURITY
MANAGEMENT
TM

[Click here
for more
information](#)

Providing
quality tools,
parts, and
service for
the security
professional.



To be a World
Leader You Need
Quality Products,
Innovative
Technology and
Strong Partners.

[Click here for more information](#)



2. One portion of the shop is dedicated to the display of safes. The shop carries many in stock.



3. The bench has room for an entire array of machines, and over them hangs the keyboard. Neatness counts in this shop. Machines are vacuumed daily.



4. Owner Brad Volpe, right, shows Rob Sullivan a new trick. Notice how this area is set up as a special work station. Everything needed for bench work is right at hand.

course on 'a day in the life of a locksmith.' We've got a full day planned for you."

I guess it was too optimistic to believe that I was going to get that nice polo shirt for nothing. However, the guys did let me chug down a cup of coffee and look around the store before we hit the road. Broward Century is one of the nicest locksmith shops I have seen. The store is about 2,500 square feet and features miles of bench space, dozens of machines, separate work stations for different jobs and retailing space for safes, locks, etc.

The shop is also a Medeco retailer. In fact, Brad sits on their locksmith advisory council. Also, the company is the exclusive importer of locks for the Sterling line of automobiles. Each day, Broward Century communicates by Fax to England, ordering locks required by U.S. Sterling dealers.

After the grand tour, Bruce Volpe and I took off in one of the four company trucks. Before becoming a locksmith, Bruce had been an airplane technician, a trade he learned originally in the military. Bruce is Brad's brother



5. Bruce Volpe recombines the lock on a brand new house, still under construction. All the exterior locks had to be keyed alike. The palm trees really add a lot to the terrace.



6. Bruce fixes the cam on the back of a defective desk lock at a local bank.

and has been with the company for about three years. With his strong mechanical background, he has learned quickly about the locksmith trade.

Our first key call was for a "simple rekey," or so Manager Mike Sullivan told us. We proceeded a few minutes down Federal Highway to the Dragon Club, a nightclub in the final phases of construction. I had never seen anything quite like this place.

The club was being built in a renovated building which had held a variety of restaurants and other businesses over the years. Giant Styrofoam dragons and creatures had been sprayed with concrete making the place look like something out of a Medieval nightmare.

Anyway, our simple rekey was not so simple after all. When an employee showed us around it became clear that they expected a bunch of no-name, hardware store locks to be keyed into an existing system. Well, if you think the dragons looked like a nightmare, you should have seen the hardware. There were at least five or six different brands all mixed together, along with numerous fire code violations.

Bruce radioed for help. Mike drove over and completed a security survey of the premises. About an hour was required for the survey. The management complained about the prices, even though such a club could be expected to take in as much as \$50,000 on a good night. A few hours later they called the shop to order the necessary material.

By that time, however, Bruce and I had already been over to the First Union Bank to fix a door controlled by card access. The door was annoying management by sticking each time it was opened. A couple of shots of lubricant solved the problem, and Bruce took an extra moment to fix a desk lock with a broken cam. Then we were on our way to the funniest call of the day.

M & W Construction had put in an emergency call to the shop. Apparently, they had locked themselves out of an important storage room. Mike radioed that we had better get over there immediately. The workman were screaming for their tools. When we got to the location, we found ourselves at a construction site for a huge retirement complex. Since asphalt was being poured, they made us walk completely around the entire site until we located the foreman. He was very glad to see us and he led us to a steel door which was locked.

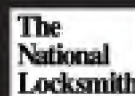
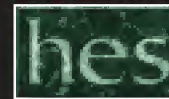
"You gotta get us in that store room quick," said the foreman. "My men need their tools."

"Are you sure there's no other way in there?" asked Bruce.

The foreman gave us a disgusted look and answered that there was no other entrance to the room, and after all he should know since he built the building, etc., etc.

Bruce picked the lock despite the heads trying to look over his shoulder as he did his work. He opened the door. There, through a very large hole in the store room's side wall, were four or five electricians peering through at us. They were running wires into the store room from an adjoining area. The foreman almost fainted from embarrassment.

Well, to make a long story short, we continued running around the area, doing work for another construction company and another bank. I am happy that the weather in Florida was a balmy 86 degrees which was a nice change from the 16 below I had left behind in Chicago. My day helped remind me that although the customer is always supposed to be right, when it comes to security, he doesn't always know what he needs. As part of the job, the locksmith must educate the customer. That way, both parties come out ahead. ■



Sargent's 10 Line

"The 10 line is an entirely new concept in lever design, incorporating some of the features of other lines, with the added ability of lever operation."

by Jack Roberts

We have written many times that everything goes "full circle" and lever handles are no different than anything else in our profession. Lever handles were in use long before the knob type became fashionable and levers are still the most predominate type of handle used on European locks.

Any door to which a latching device is installed must have a means of retracting the latch before ingress or egress can be obtained. NFPA 101, 5-2.1.5.3 requires that a latch or other fastening device on a door shall be provided with a knob, handle, panic bar or other simple type of releasing device

having an obvious method of operation under all lighting conditions. Nothing in this section refers to a "lever handle" as such using only the term "releasing device" as a means of retracting the latch or other fastening device.

While this requirement is rather broad in scope as applied to NFPA 101, recent years have focused attention on the ability, or inability, of a handicapped person to operate a releasing device as defined in this section.

National, state and local handicapped requirements as well as ANSI 156.2 and UL-F 804H have created the need for lever handle locksets that will

meet or exceed any or all of these criteria. Retrofit kits have been available for some time that in effect create a "lever handle set" from an existing "knob set" cylindrical type of latching device.

We have found that although these kits do provide very secure and substantial means for attachment of a lever to a knob, and cosmetically offer proof of compliance with code, nothing is provided which will substantially strengthen the construction of the lockset to withstand the additional pressures which are applied from a lever handle.

Many mortise lock manufacturers



STRATTEC™

**It's your reputation.
Trust the original.**

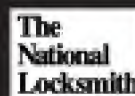
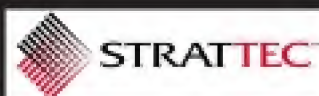
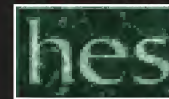
[Click here
for more
information](#)

medeco®

HIGH SECURITY LOCKS

[Click here for more information](#)

Integrity.
Ingenuity...
security solutions.

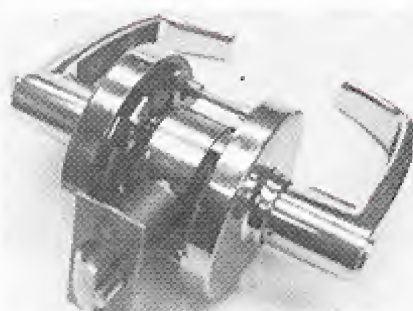


state specifically that lever handles must not be attached to an existing knob type mortise lock without the installation of springs specifically designed for lever handle operation. Improper latch and/or spindle springs on cylindrical or mortise locksets can result in sagging levers and, more importantly, inadequate latching or other assorted locking problems.

While it must be admitted that a retrofit lever handle may be quite adequate for a light or medium duty cylindrical lockset that is being used a few times each day by a lightweight person with arthritic hands, a high traffic lockset, being used many times a day by a wide variety of users can be subjected to immeasurable stress.

It appears that the Sargent Lock Co. has taken the time to thoroughly evaluate, research and test the need for a lever handle cylindrical lockset that will meet or exceed all existing bureaucratic criteria as well as provide years of trouble-free operation under all types of user abuse. The Sargent 10 Line is the end result. (See photograph 1.)

An entirely new concept in lever handle cylindrical lockset design, the 10 Line incorporates some of the con-



1. The Sargent 10 Line lever handle lockset.

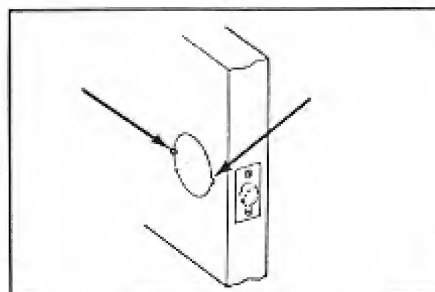


Illustration 2

struction features of the very reliable 6, 7, 8, and 9 Line locksets with the added ability of lever handle operation under all operating conditions.

Available in 15 function, six finishes and any Sargent keyway the 10 line is shipped "right hand," and set for 1 1/4" thick doors with 2 3/4" backset. Our

review lockset, furnished by Dugmore & Duncan, is a 10G05, Entrance Function. Hand change and door thickness adjustments are easily accomplished and will be detailed later in this article; 3 3/4" and 5" backsets are available.

Door prep for the 10 Line is virtually the same as for any cylindrical type of lockset with which you may be familiar, although there are a couple of extra steps that must be performed for proper installation. For an existing 2 1/8" cross bore hole a 5/32" x 5/32" notch must be cut (laterally) on each side of the hole to accommodate tabs on the mounting plates. (See illustration 2.) For existing prep these notches can be cut with a file or small router bit. For new prep two 5/32" holes 5/32" deep can be drilled on each side of the door prior to cutting the cross bore hole. Two additional holes, 7/16" diameter, must also be drilled which will be explained fully as our installation progresses.

With the door prepped the latch bolt unit is installed, properly handed, and secured with two screws provided.

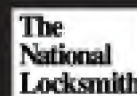
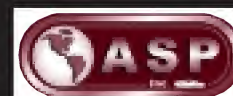
The next step is disassembly of the lockset unit. The inside handle is removed by depressing the lever catch through the access hole on the edge of

Major

MANUFACTURING, INC.

**Every Installation
Is a Self-Portrait
Of the Person Who Did It.
Autograph Your Work with Excellence.**

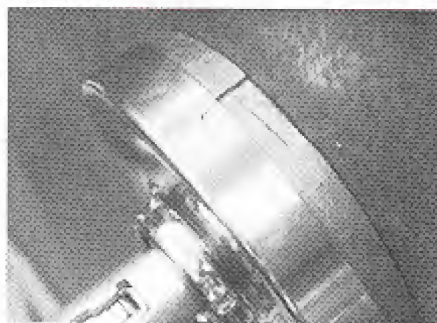
[Click here for more information](#)



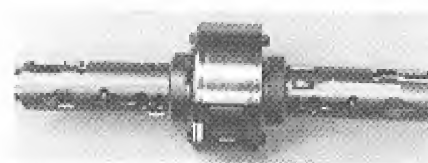
the lever handle. Next, the scalp which covers the inside rose is removed by twisting it counterclockwise and pulling. (See photograph 3.) Tabs inside the scalp engage grooves in the edge of the rose which holds the scalp in place. *Do not* attempt to remove the scalp by prying it off; a slight twist is all that is necessary.

With the scalp removed the inside rose and spring cartridge can now be removed from the tube (spindle). The lever catch will have to be depressed for removal of this assembly. Let's back up at this point and take a look at something different in cylindrical lockset terminology, (i.e., spring cartridge). There are two of them, one inside each rose, and these are the items that set the 10 Line apart from typical cylindrical locksets, provide smooth operation of the unit, and maintain true horizontal positioning of the levers at all times. More about spring cartridges a little later.

The next step in disassembly of the lockset is removal of the interior mounting plate nut (a wrench is furnished), and the interior mounting plate, both of which are slid off the tube (spindle). Next, the outside lever handle is removed by inserting the key and



3. Removing the scalp which covers the inside rose.



4. The bare 10 line with the outside rose removed.

turning it 45 degrees clockwise, depressing the lever catch through the hole in the handle and removing the handle from the tube (spindle).

The outside rose can now be removed but *do not* attempt to remove the scalp. It is permanently attached to the rose. With these parts removed the outside mounting plate and nut are visible. It is not necessary to remove these

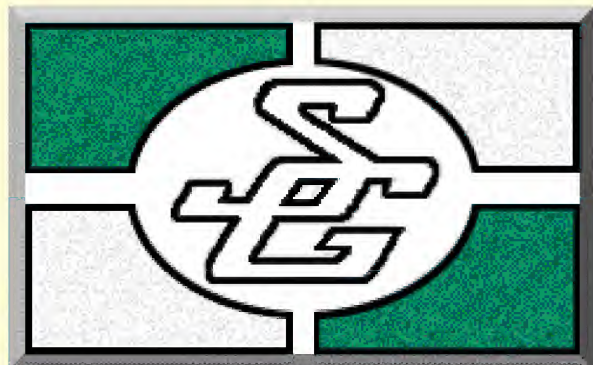
parts although they have been removed to show the "bare-bones" 10 Line in photograph four. Note the heavy lugs, (arrow) which engage the lever handles.

As noted earlier, all 10 Line locksets are set for 1 1/4" thick doors, right hand. We will assume this for our installation and later explain the procedures for door thickness adjustment and hand changing.

Now, with the door prepped, the latch bolt installed, and all trim removed we can slide the lock body into the cross bore hole, (from the outside) making sure that the lock body engages the tabs (or prongs) of the latch unit and that the retractor in the lock body engages the "T" on the end of the latch unit tailpiece. It isn't a bad idea at this point to hold everything in place and depress the outside handle to be certain that the latch is retracting properly.

Next, place the inside mounting plate and depress the outside handle to be certain that the latch is retracting properly.

Next, place the inside mounting plate and nut on the tube (spindle), ascertain that the tabs on the plate slide into the slots on the lock body, and tighten the nut securely. A die cut tem-



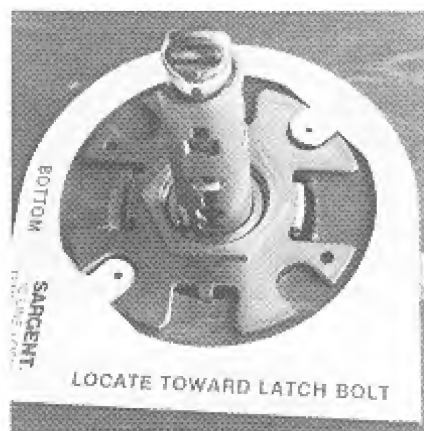
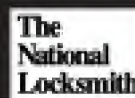
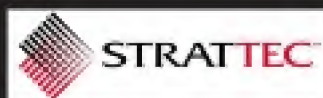
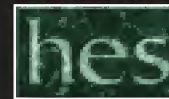
Choose S & G
Comptronic electronic
safe locks for...security...
technology...tradition.

[Click here for more information](#)

SRi
SECURITY
RESOURCES INC.

SRi and Tech Train
Productions are the
automotive specialists -
your best source for
automotive tools,
manuals, and videos.

[Click here for more information](#)



5. Template properly positioned over the mounting plate.

plate is furnished to properly locate the two 7/16" holes mentioned earlier. Place the template over the mounting plate on one side of the door, making sure that it is positioned properly (the word "bottom" goes at the bottom), and mark the holes. (See photograph 5.) Drill halfway through the door and then position the template on the other side and repeat the procedure.

The next step is to secure the inside and outside mounting plates to the door with the self-tapping screws, provided. (See photograph 6.) The roses



6. Securing mounting plates to the door.

(and spring cartridges) can now be installed. Place the outside rose over the tube (spindle) aligning the posts with the holes just drilled and slide it into place. Do the same with the inside rose and secure the two with the two screws furnished. (See photograph 7.) Next, place the inside rose scalp into position and turn it clockwise until it snaps into position.

All that is left to complete the installation is to slide the inside lever handle onto the tube (spindle) until it is secured by the lever catch; slide the outside lever handle onto the outside tube (spindle) as far as it will go, insert the key, turn it 45 degrees, depress the lever catch and push on the handle until it is retained by the catch. Check



7. The rose installed.

the operation of both lever handles for free and smooth movement, check the key for proper locking and unlocking operation, install the strike and check for proper latching and the installation is complete. (See photograph 8.)

This is a little different than the usual cylindrical lockset installation and some extra time should be considered when making a quotation for this type of lockset.

We have assumed that we have a 1 1/4" RH door for this installation. Now, let's take a look at the 10 Line means of adjustment for different door thick-



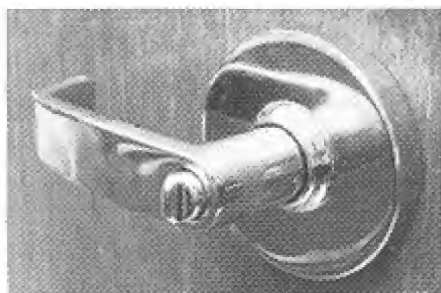
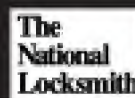
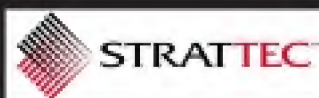
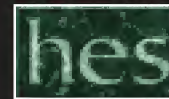
**HPC has it all:
Key Machines, Software, Books,
Car Openers, Pick Sets, Tools,
Door Guards, and Key Cabinets**

[Click here for more information](#)

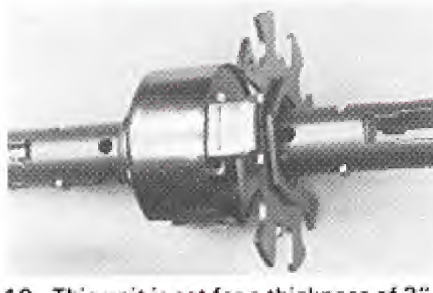


**Don't panic!
We have Security
Exit Devices.**

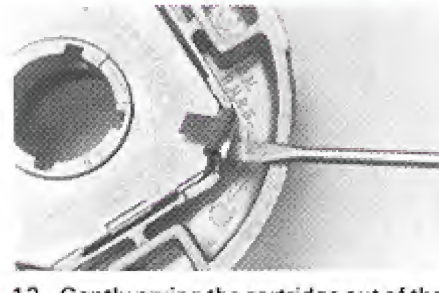
[Click here for more information](#)



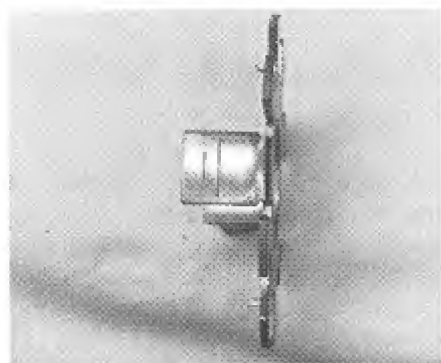
8. Completed installation.



10. This unit is set for a thickness of 2". (See mark that it's adjusted to.)



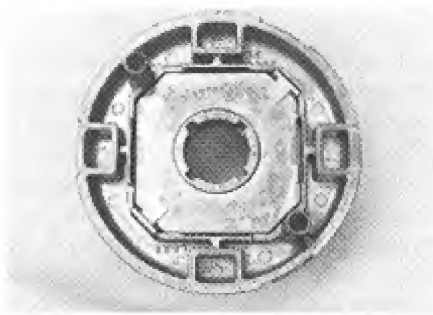
12. Gently prying the cartridge out of the rose.



9. Note marks on the outside mounting plate for two door thicknesses.

nesses. Note that the tab on the outside mounting plate has two marks. (See photograph 9.) The long mark is for a 1 3/4" door and the short mark is for a 2" door.

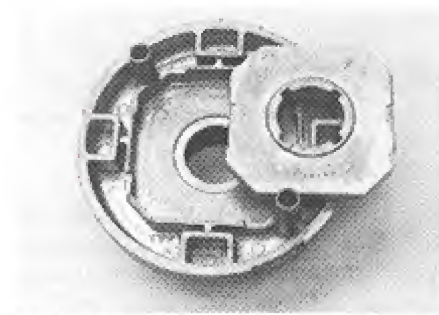
Door thickness adjustment is accom-



11. Arrows inside rose indicate proper direction for RH and LH.

plished by turning the outside nut to align one of these marks with the edge of the lock body. Photograph 10 shows the unit set for a door thickness of 2". Halfway between the two marks would be 1 3/4", etc., and that's all there is to door thickness adjustment.

Hand change is easily accomplished



13. The cartridge shown removed from the rose.

in the following manner: With all trim removed, note the spring cartridge located inside each rose and the arrows (on the rose and also on the cartridge) which indicate the direction for RH and LH. (See photograph 11.) The cartridge is held in place by two clips which are removed by gently prying

NATIONAL AUTO LOCK SERVICE, INC.

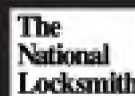
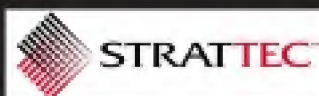
National Auto Lock Service, Inc. offers a wide range of equipment and services for the Automotive Locksmith. From tools and hard to find key blanks to transponder programming, we can take the mystery out of car service. We accept credit card orders, and can ship COD. Contact us for the latest in automotive technology.

www.laserkey.com



ASP - Your Auto
Service Center
for the World

[Click here for more information](#)



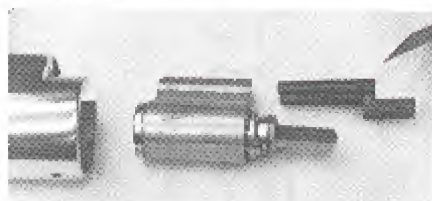
with the tip of a flat screwdriver. (See photograph 12.) Lift the cartridge out of the rose (see photograph 13), turn it over, replace it in the rose and press the securing clips back into place. Repeat this procedure for the other rose and cartridge and hand change is completed.

If it is necessary to remove the cylinder for rekeying or for changing to a different keyway, remove the lever handle as previously described and with a regular plier, grasp the end of the cylinder retainer and pull it from the handle. (See photographs 14 and 15.) When replacing the cylinder, it is secured in place by pressing the retainer in position until it is flush with the shelf of the handle.

We put the 10 Line through some



14. Grasp the cylinder retainer with a plier...



15...and remove it from the handle.

pretty heavy-handed tests, cycled the retraction continuously for over an hour (about 4000 times) and tried to muscle it from the door with nothing to show except some bruised hands. When you consider that the mounting plates, 3 1/8" diameter, are secured to the door and the lock body by two 1-1/16" lock nuts and four mounting screws and that the 3 1/2" roses are attached with two 10-32 x 2 1/2" screws, you have a pretty solid foundation for trouble-free operation.

The complete 10G05 lockset weighs in at just under five pounds and that's a lot of stuff for a cylindrical lockset. We mentioned earlier that the 10 Line is available in 15 functions, two of which are not operating functions as such but are double handle pulls for doors with no latching mechanism. The 10U94, consisting of two lever handles and roses, is designed for a door that has never been prepped. The 10U94-2 is the same except that a cover plate is included for a latch cut-out.

A "G" in the part number (i.e., 10G05), means that the latch has a guard bolt or it is a deadlocking latch, while the "U" means that it is a latch only. A 10U15, for instance, is a passage set, two lever handles and a latch.

Our review lockset is a 10G05 LL x 26. Breaking this down, the 10 means 10 Line; G means guarded latch; 05 is the function, entrance or office; and LL is lever handle. The standard 10 Line comes with a #800 2 3/4" x 1 1/8" lip strike (lip length 1 1/4") and a wrought aluminum latch box. A #808 strike, 4 7/8" x 1 1/4" with a lip length of 1 1/4" is available by prefixing the part number with "28." Our part number would then appear as 28 10G05 LL x 26.

Standard backset is 2 3/4" but as mentioned earlier 3 3/4" and 5" backsets are available. These are designated by "23" and "25" respectively which are also prefixed to the part number.

Now, assuming that the specs call for a communicating function lever handle lockset in 26D finish with a 4 7/8" strike and a 5" backset, the order number would look like this; 25 28 10G30 LL x 26D. The Sargent catalog section describing the 10 Line specs, functions, parts, assemblies, installation, finishes and special prefix numbers has been well prepared and is easy to follow. Similar to the computer term "user friendly," I would call the 10 Line lockset "installer friendly."

We are grateful to the staff at Dugmore & Duncan, a full line Sargent source, for their valuable assistance in the preparation of this review. ■

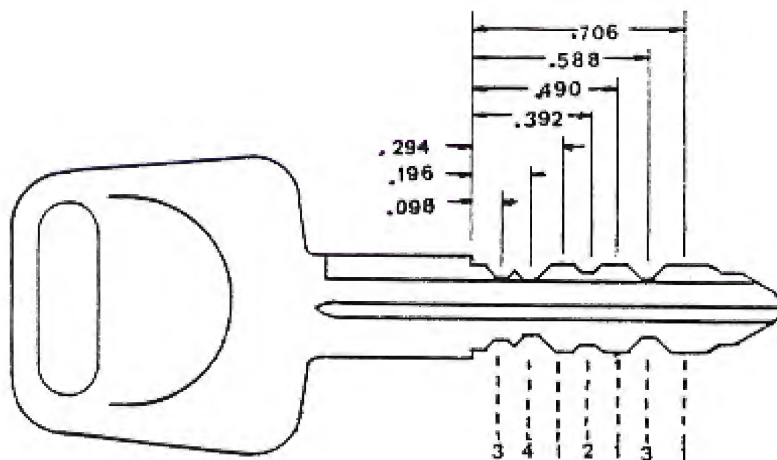


***We have it all.
Quality, Value,
& Service.***

[Click here for more information](#)

Hyundai Sonata Codes

Y1001-2000



DEPTHS

0 -	5 -
1 - 0.283	6 -
2 - 0.263	7 -
3 - 0.243	8 -
4 - 0.223	9 -

KEYWAYS

Silca HYN5
Taylor X196



**The Innovation You Expect, with the
Flexibility You Need!**

[Click here for more information](#)



X1001-2000 HYUNDAI

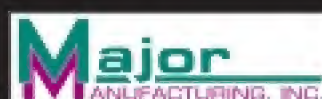
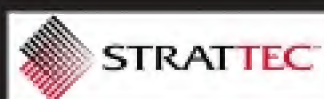
Keyblanks:

Silca HYN5
 Taylor X196

Code Machines:

1200 CM No. XF206

1001	1051	1101	1151	1201
01 4434323	51 4421132	01 4341243	51 4322141	01 4243341
02 4434233	52 4414332	02 4341232	52 4322123	02 4243314
03 4434211	53 4414312	03 4341214	53 4322112	03 4243233
04 4434121	54 4414213	04 4341133	54 4321434	04 4243213
05 4433423	55 4414123	05 4341122	55 4321421	05 4243141
06 4433243	56 4413432	06 4334421	56 4321344	06 4243123
07 4433232	57 4413412	07 4334324	57 4321324	07 4243112
08 4433214	58 4413322	08 4334243	58 4321311	08 4242421
09 4433131	59 4413243	09 4334232	59 4321234	09 4242331
10 4433113	60 4413232	10 4334214	60 4321211	10 4242311
11 4432422	61 4413214	11 4334131	61 4321144	11 4242234
12 4432343	62 4413133	12 4334113	62 4321131	12 4242133
13 4432332	63 4413122	13 4332434	63 4314432	13 4242113
14 4432314	64 4412431	14 4332421	64 4314412	14 4241422
15 4432233	65 4412411	15 4332344	65 4314324	15 4241343
16 4432211	66 4412334	16 4332322	66 4314311	16 4241332
17 4432134	67 4412321	17 4332241	67 4314234	17 4241314
18 4432121	68 4412242	18 4332214	68 4314221	18 4241233
19 4431432	69 4412213	19 4332142	69 4314142	19 4241213
20 4431412	70 4412141	20 4332122	70 4314124	20 4241141
21 4431324	71 4412123	21 4331431	71 4313442	21 4241122
22 4431311	72 4412112	22 4331413	72 4313422	22 4234431
23 4431234	73 4411421	23 4331321	73 4313341	23 4234411
24 4431221	74 4411331	24 4331244	74 4313312	24 4234334
25 4431142	75 4411313	25 4331224	75 4313231	25 4234321
26 4431124	76 4411234	26 4331143	76 4313211	26 4234242
27 4424322	77 4411221	27 4331132	77 4313134	27 4234224
28 4424232	78 4344332	28 4324433	78 4313121	28 4234143
29 4424212	79 4344312	29 4324413	79 4312443	29 4234132
30 4424122	80 4344213	30 4324341	80 4312432	30 4234114
31 4423431	81 4344123	31 4324323	81 4312414	31 4233441
32 4423411	82 4343432	32 4324312	82 4312342	32 4233423
33 4423323	83 4343412	33 4324231	83 4312322	33 4233412
34 4423312	84 4343322	34 4324211	84 4312243	34 4233234
35 4423231	85 4343241	35 4324134	85 4312232	35 4233221
36 4423211	86 4343223	36 4324121	86 4312144	36 4233144
37 4423134	87 4343212	37 4323443	87 4312131	37 4233124
38 4423121	88 4343124	38 4323432	88 4312113	38 4232442
39 4422432	89 4342433	39 4323414	89 4311431	39 4232424
40 4422412	90 4342413	40 4323342	90 4311413	40 4232343
41 4422324	91 4342341	41 4323311	91 4311334	41 4232332
42 4422142	92 4342323	42 4323234	92 4311321	42 4232314
43 4422124	93 4342312	43 4323221	93 4311244	43 4232233
44 4421431	94 4342231	44 4323144	94 4311231	44 4232211
45 4421411	95 4342143	45 4323124	95 4244331	45 4232134
46 4421334	96 4342132	46 4322442	96 4244311	46 4232121
47 4421321	97 4342144	47 4322424	97 4244221	47 4231443
48 4421242	98 4341423	48 4322343	98 4244131	48 4231432
49 4421224	99 4341342	49 4322332	99 4243433	49 4231414
50 4421143	00 4341322	50 4322314	00 4243413	50 4231342



X1001-2000 HYUNDAI

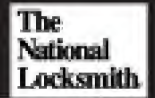
Keyblanks:

Silca HYN5
 Taylor X196

Code Machines:

1200 CM No. XF206

1251	1301	1351	1401	1451
51 4231322	01 4212332	51 4133413	01 4121423	51 3441234
52 4231243	02 4212314	52 4133242	02 4121412	52 3441221
53 4231232	03 4212233	53 4133213	03 4121331	53 3441142
54 4231214	04 4212211	54 4133141	04 4121313	54 3441124
55 4231142	05 4212134	55 4133123	05 4121234	55 3434423
56 4231124	06 4212121	56 4133112	06 4121221	56 3434342
57 4224423	07 4211443	57 4132434	07 4121144	57 3434241
58 4224342	08 4211432	58 4132421	08 4121124	58 3434142
59 4224313	09 4211414	59 4132344	09 4114423	59 3433411
60 4224241	10 4211342	60 4132324	10 4114342	60 3433121
61 4224142	11 4211322	61 4132311	11 4114322	61 3432441
62 4224124	12 4211241	62 4132234	12 4114241	62 3432241
63 4223433	13 4211223	63 4132212	13 4114223	63 3431431
64 4223413	14 4211212	64 4132133	14 4114212	64 3431321
65 4223341	15 4144321	65 4132122	15 4114124	65 3431141
66 4223314	16 4144231	66 4131433	16 4113433	66 3424431
67 4223233	17 4144132	67 4131422	17 4113422	67 3424411
68 4223211	18 4144112	68 4131341	18 4113341	68 3424334
69 4223134	19 4143421	69 4131323	19 4113314	69 3424231
70 4223121	20 4143324	70 4131312	20 4113242	70 3424141
71 4221442	21 4143311	71 4131233	21 4113224	71 3423443
72 4221424	22 4143234	72 4131213	22 4113134	72 3423311
73 4221343	23 4143221	73 4131132	23 4112443	73 3423221
74 4221332	24 4143142	74 4124431	24 4112432	74 3422431
75 4221314	25 4143124	75 4124411	25 4112414	75 3422334
76 4221233	26 4142433	76 4124334	26 4112342	76 3422141
77 4221211	27 4142413	77 4124321	27 4112322	77 3422112
78 4221134	28 4142341	78 4124242	28 4112241	78 3421421
79 4221121	29 4142323	79 4124224	29 4112214	79 3421241
80 4214422	30 4142312	80 4124143	30 4112142	80 3421131
81 4214343	31 4142231	81 4124132	31 4112122	81 3414421
82 4214332	32 4142143	82 4124114	32 3443421	82 3414331
83 4214314	33 4142132	83 4123441	33 3443324	83 3414241
84 4214233	34 4142114	84 4123423	34 3443243	84 3414142
85 4214213	35 4141423	85 4123412	35 3443232	85 3413431
86 4214141	36 4141342	86 4123324	36 3443214	86 3413321
87 4214123	37 4141322	87 4123311	37 3443131	87 3413141
88 4214112	38 4141241	88 4123234	38 3443113	88 3412443
89 4213434	39 4141223	89 4123221	39 3442422	89 3412331
90 4213421	40 4141212	90 4123144	40 3442343	90 3412131
91 4213344	41 4141124	91 4123131	41 3442332	91 3411341
92 4213322	42 4134423	92 4123113	42 3442314	92 3411312
93 4213243	43 4134342	93 4122431	43 3442233	93 3344311
94 4213232	44 4134322	94 4122411	44 3442211	94 3344223
95 4213214	45 4134243	95 4122334	45 3442134	95 3344131
96 4213142	46 4134232	96 4122321	46 3442121	96 3343211
97 4213124	47 4134214	97 4122143	47 3441432	97 3343112
98 4212442	48 4134133	98 4122132	48 3441412	98 3342421
99 4212424	49 4134122	99 4122114	49 3441324	99 3342131
00 4212343	50 4133431	00 4121441	50 3441311	00 3341411



X1001-2000 HYUNDAI

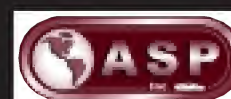
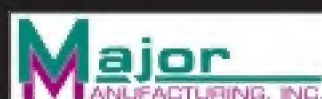
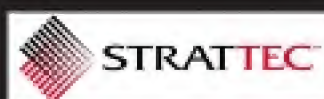
Keyblanks:

Silca HYN5
 Taylor X196

Code Machines:

1200 CM No. XF206

1501	1551	1601	1651	1701
01 3341231	51 3221331	01 3112231	51 2421424	01 2342134
02 3341121	52 3221241	02 2443411	52 2421343	02 2342114
03 3324241	53 3214331	03 2443314	53 2421323	03 2341434
04 3324131	54 3214223	04 2443141	54 2421244	04 2341414
05 3323141	55 3213431	05 2443112	55 2421213	05 2341324
06 3322441	56 3213321	06 2442311	56 2421141	06 2341243
07 3322311	57 3213141	07 2441431	57 2421121	07 2341223
08 3321411	58 3212441	08 2441334	58 2414341	08 2341144
09 3321231	59 3212331	09 2441211	59 2414321	09 2341124
10 3321121	60 3212241	10 2434431	60 2414231	10 2334423
11 3314341	61 3211341	11 2434334	61 2414141	11 2334412
12 3314211	62 3211312	12 2434321	62 2414121	12 2334324
13 3314112	63 3144331	13 2434231	63 2413441	13 2334243
14 3313241	64 3144241	14 2434141	64 2413421	14 2334232
15 3312411	65 3144142	15 2434121	65 2413324	15 2334214
16 3312231	66 3143431	16 2433441	66 2413243	16 2334142
17 3312121	67 3143321	17 2433423	67 2413223	17 2334122
18 3311421	68 3143141	18 2433243	68 2413144	18 2332441
19 3311223	69 3142443	19 2433232	69 2413124	19 2332423
20 3244343	70 3142331	20 2433214	70 2412424	20 2332412
21 3244321	71 3142131	21 2433124	71 2412343	21 2332324
22 3244211	72 3141341	22 2432424	72 2412323	22 2332241
23 3244121	73 3141312	23 2432343	73 2412244	23 2332144
24 3243441	74 3134431	24 2432332	74 2412213	24 2332124
25 3243241	75 3134321	25 2432314	75 2412141	25 2331431
26 3243131	76 3134141	26 2432231	76 2412121	26 2331413
27 3242411	77 3133441	27 2432143	77 2411441	27 2331321
28 3242323	78 3133221	28 2432123	78 2411421	28 2331244
29 3242231	79 3132341	29 2432112	79 2411344	29 2331224
30 3242141	80 3132211	30 2431423	80 2411243	30 2331143
31 3242112	81 3132112	31 2431344	81 2411223	31 2331132
32 3241421	82 3131412	32 2431313	82 2411212	32 2324433
33 3241241	83 3131221	33 2431241	83 2344332	33 2324413
34 3241131	84 3131122	34 2431221	84 2344314	34 2324341
35 3234241	85 3124311	35 2431133	85 2344213	35 2324323
36 3234131	86 3124221	36 2424421	86 2344134	36 2324244
37 3233141	87 3123411	37 2424313	87 2344114	37 2324213
38 3232441	88 3123231	38 2424234	88 2343434	38 2324141
39 3232311	89 3123121	39 2424131	89 2343421	39 2324121
40 3232131	90 3122423	40 2423431	90 2343342	40 2323443
41 3231341	91 3122311	41 2423411	91 2343311	41 2323432
42 3231211	92 3121341	42 2423323	92 2343234	42 2323414
43 3224431	93 3121312	43 2423244	93 2343221	43 2323324
44 3224334	94 3114431	44 2423213	94 2343131	44 2323241
45 3224233	95 3114321	45 2423141	95 2342431	45 2323144
46 3224211	96 3114132	46 2423121	96 2342411	46 2322433
47 3224121	97 3113412	47 2422441	97 2342334	47 2322411
48 3223423	98 3113221	48 2422344	98 2342321	48 2322334
49 3223243	99 3112122	49 2422311	99 2342233	49 2322141
50 3221441	00 3112334	50 2422131	00 2342211	50 2321441



X1001-2000 HYUNDAI

Keyblanks:

Silca HYN5
 Taylor X196

Code Machines:

1200 CM No. XF206

1751	1801	1851	1901	1951
51 2321423	01 2241123	51 2144121	01 2123213	51 1441221
52 2321344	02 2234431	52 2143441	02 2124141	52 1441124
53 2321313	03 2234411	53 2143421	03 2124121	53 1434331
54 2321241	04 2234334	54 2143324	04 2123443	54 1434243
55 2321144	05 2234321	55 2143243	05 2123423	55 1434221
56 2321124	06 2234233	56 2143223	06 2123344	56 1433431
57 2314421	07 2234211	57 2143144	07 2123311	57 1433231
58 2314331	08 2234134	58 2143124	08 2123234	58 1433143
59 2314311	09 2234114	59 2142424	09 2123133	59 1433123
60 2314234	10 2233441	60 2142343	10 2122433	60 1433112
61 2314214	11 2233423	61 2142323	11 2122311	61 1432423
62 2314131	12 2233243	62 2142244	12 2122334	62 1432313
63 2313424	13 2233214	63 2142213	13 2122141	63 1432241
64 2313341	14 2233124	64 2142141	14 2121443	64 1431433
65 2313312	15 2232413	65 2142121	15 2121423	65 1431343
66 2313224	16 2232341	66 2141441	16 2121412	66 1431323
67 2313143	17 2232143	67 2141421	17 2121324	67 1431231
68 2313132	18 2232114	68 2141344	18 2121234	68 1431123
69 2313114	19 2231434	69 2141243	19 2121142	69 1424413
70 2312441	20 2231414	70 2141223	20 2114423	70 1424341
71 2312421	21 2231324	71 2141212	21 2114412	71 1424321
72 2312331	22 2231243	72 2141124	22 2114324	72 1424224
73 2312311	23 2231214	73 2134423	23 2114234	73 1424143
74 2312234	24 2231131	74 2134344	24 2114214	74 1424121
75 2312133	25 2214431	75 2134313	25 2114142	75 1423443
76 2311433	26 2214411	76 2134241	26 2113433	76 1423421
77 2311343	27 2214334	77 2134221	27 2113343	77 1423243
78 2311332	28 2214314	78 2134133	28 2113321	78 1423221
79 2311314	29 2214231	79 2133431	29 2113244	79 1422433
80 2311233	30 2214143	80 2133411	30 2113134	80 1422413
81 2244324	31 2214123	81 2133224	31 2112441	81 1422341
82 2244241	32 2214112	82 2133143	32 2112421	82 1422321
83 2244133	33 2213434	83 2133132	33 2112344	83 1422123
84 2243433	34 2213414	84 2133114	34 2112243	84 1422112
85 2243413	35 2213313	85 2132441	35 2112214	85 1421423
86 2243341	36 2213241	86 2132421	36 2112124	86 1421313
87 2243314	37 2213144	87 2132331	37 1443324	87 1421223
88 2243231	38 2213124	88 2132311	38 1443243	88 1414423
89 2243143	39 2212413	89 2132234	39 1443223	89 1414313
90 2243123	40 2212341	90 2132133	40 1443133	90 1414223
91 2243112	41 2212143	91 2131433	41 1442433	91 1413433
92 2242414	42 2212114	92 2131343	42 1442411	92 1413343
93 2242313	43 2211434	93 2131332	43 1442334	93 1413321
94 2242133	44 2211414	94 2131314	44 1442314	94 1413212
95 2241431	45 2211331	95 2131233	45 1442213	95 1412443
96 2241411	46 2211241	96 2131132	46 1442141	96 1412421
97 2241334	47 2144341	97 2124424	47 1442121	97 1412243
98 2241314	48 2144321	98 2124343	48 1441423	98 1411433
99 2241231	49 2144231	99 2124323	49 1441324	99 1411323
00 2241142	50 2144141	00 2124244	50 1441241	00 1344313

Shop Talk

Helpful Questions and Answers

Shop Talk answers readers questions on any locksmith related topic. Only letters judged to be of general interest will be published. We regret that we cannot answer individual letters. Because of the volume of mail, only those questions published in the magazine will receive answers. Send your locksmith questions to Shop Talk: *The National Locksmith*, 1533 Burgundy Parkway, Streamwood, IL 60107.

Q: I received my first copy of The National Locksmith and I came across Shop Talk. I hope you can help me with my question.

I got a call from an owner of a new development and was asked to change the combinations on all their doors. At

the finish of my work I was informed by the owner that they were told by the builder that the combination didn't have to be changed because as soon as the owner inserted his key, the builder's key would no longer work. The owner was skeptical and so was I until I came across this article on Protecto Key, by Kwikset. I was even more skeptical when I dumped all the pins out and the master pins came out too.

*W.R. Gordon
Pennsylvania*

A: Homeowners would be well advised to re-key their locks entirely upon purchase. This includes locks that have been sold with the understanding that the builder's key will no longer work once the homeowner's key

is inserted and turned—regardless of the lock manufacturer involved.

Kwikset, like many other manufacturers of builder's hardware, offers a construction keying alternative to the necessity of re-keying. The concept is simple.

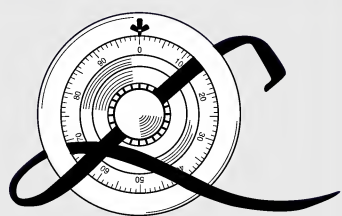
In Kwikset's case, for example, the plug of the lock has a series of small holes or dimples on the side of it. The homeowner's key will be a standard key, with a cut range of 0 to 6. The builder's key (and other master keys) will include a #7 cut. For example, two common builder's keys across the country 67667 and 76667.

To allow the builder's key to work, it is inserted in the plug with the pins to accommodate the homeowner's key already in it. Small steel balls are then

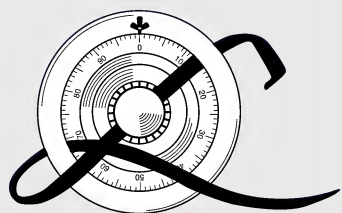


HPC, Inc.
Designing Excellence and Manufacturing
Quality since 1956

[Click here for more information](#)



Lockmasters
has a
44 year
history of
training
security
professionals.



[Click here for more information](#)

inserted to fill the chamber to the shearline. These act as a sort of master pin to allow the builder's key to operate. When the homeowner inserts his key, these small balls are raised above the shearline, since it brings the actual pins to the shearline.

As the homeowner turns his key, the balls contact the dimples on the side of the plug. The spring pressure on the top pin (driver) pushes down on the steel balls, and they become trapped in the dimples. When the lock cylinders are later re-keyed by a locksmith, these typically fall out.

It sounds wonderful, and works relatively well in most instances, but other factors make it inadvisable to depend on it for any longer than necessary. One of these factors is that many builders and builder's hardware companies have experienced problems with homeowners who use their key a day too soon, or with poorly copied builder's keys that cause some of the balls to fall into the dimples prematurely, preventing other builder's keys from working.

For these and other reasons, frequently master pins are used in place of the steel balls in one or all positions. I have seen locks that the builder sells as Protecto-keyed with master pins in all positions and no steel balls in them.

I have also seen many locks with master pins in all but one position, so that they still are Protecto-keyed, and the builder can even show the homeowner that his key no longer operates it. Yet only a difference of .023" to .046" in one position prevents its operation. Some builders have special keys made to take advantage of this minimal difference so they can get in to do minor touch-up work between the time the keys are turned over to the homeowner and the time the homeowner actually moves in.

Still other builders have a master key for all of their buildings that works independently of the Protecto-Keys system, even though it may still be used. Often half of the sub-contractors on the job have this master as well as the builder's key on their work ring.

In short, the Protecto-Key system is designed to allow the homeowner some peace of mind, and to protect the foolish homeowner who would not consider re-keying the locks. But the wise homeowner will *always* re-key the locks when he or she moves in. 05

Q: Photograph one shows a Junkunc bicycle lock. How can it be opened?

Major
MANUFACTURING, INC.

Installation
Tools

The
Professionals
Choice

Major
MANUFACTURING, INC.

[Click here for more information](#)

medeco
HIGH SECURITY LOCKS

The market
leader in
locking
systems for
security,
safety, and
control.

[Click here for more information](#)



1. Junkunc bicycle lock.

I've tried picking and skimming to no avail. Can you offer any suggestions? What is this lock worth? Please advise.

*John Boncuore
Illinois*

A: Many thanks, John, for letting all of us see this interesting offering from the Junkunc Brothers. Although this padlock could be used for bicycles or any other use it was designed and marketed as a spare tire lock. Known as the new Junkunc Style "U" tire lock it had a short production run in the mid 30's. Changes in automobile designs for spare tire storage and the rapid technological changes in tires and wheels of the period made it impractical to continue production.

You haven't given us any measurements of your lock, but the style "U" was manufactured in three sizes. The large, for Hudson, Buick, and other cars having similar size tires, at \$4.00; the medium, for Ford, Pontiac, Dodge, and other cars having similar size tires, at \$3.75; and the medium with rubber, for Chevrolet, and other cars having similar size tires, also at \$3.75. Advertising of the period states that the "U" is positively the last word in tire theft prevention protecting both the tire and the rim.

I can't offer any suggestions for opening this lock other than picking or impressioning either of which shouldn't be too difficult if the lock hasn't been damaged and the wafer discs are free. The collector value of your lock would be in the \$10 to \$15 range.

Thanks for writing to *Shop Talk*, John, and keep working on your picking and impressioning skills. 03

NATIONAL
AUTO LOCK SERVICE, INC.

National Auto Lock Service, Inc. offers a wide range of equipment and services for the Automotive Locksmith. From tools and hard to find key blanks to transponder programming, we can take the mystery out of car service. We accept credit card orders, and can ship COD. Contact us for the latest in automotive technology.

www.laserkey.com



Make Sargent
& Greenleaf's
Comptronic
locks your
choice for
electronic
safe locking
solutions.

[Click here for more information](#)

Electronic Repairs

Continued from page 32

adult school. The information gained, along with the familiarity to simple equations like ohms and watts laws will help immensely on a difficult problem or on a complex system. There are also some excellent two or three day classes held during national and local association conventions. I was told by one locksmith that he learned enough during a two day hands on class to troubleshoot and repair his first wiring problem call in under five minutes.

When you take a class (other than at a community college) you should take the time to check the academic qualifications of the instructor. You are more at risk of receiving mis-information or half truths if the instructor does not have at least a few semesters of college level electronics under his belt. ■

Confucious Say...

Continued from page 49

however, he discovered that his friend simply needed help rigging an inflated replica of King Kong atop the building, as a practical joke on someone. (Confucious say, "He who climb tall building in summer may have dangerous fall.")

The wife of a locksmith whom we know operates a chauffeured limousine service out of Seguin, Texas, near San Antonio. One evening, they were preparing to attend a gala affair in the city, complete with formal dress and tuxedo, and had decided to travel in one of their new luxury limousines. As they were preparing to leave the house, the telephone rang... You guessed it!

With insufficient time to change clothes still arrive at their social function punctually, they decided to forgo the service van, as well. "Besides," they said to one another, "what better way to advertise our new limousine service?" (Confucious say, "Man never has second chance to make first impression.") Grabbing their car-opening tools, they hastened to the rescue.

Can you imagine the look on their customer's face when a locksmith stepped out of the long, white, chauffeured, luxury limousine, dressed in a tuxedo? Talk about white-glove service! No doubt, that was the most elegant car-opening in history. ■

Mazda

Continued from page 58

Photograph seven shows an empty housing from the lock. When reassembling, carefully insert the opposite side



It's not
safe
unless
it's
Schwab
Safe.

[Click here for more information](#)

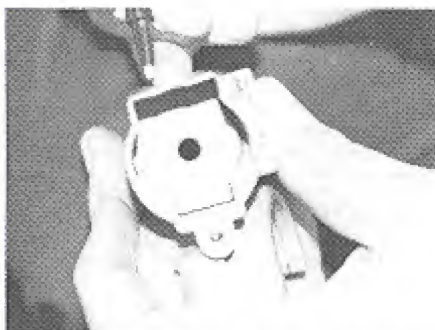
SRI
SECURITY
RESOURCES INC.

**SRi and
Steve Young
are working
together to
bring you
the best in
locksmith
tools and
supplies.**

[Click here for more information](#)

from the broken crimp in under the intact crimped over section, not touched. This section matches the one broken off on the opposite side.

In photograph eight, using a center punch in that location, dent or dimple the casing in two or three locations in line with the plate. This causes it to protrude on the inside, staking the plate in place. In photographs nine and 10, two other necessary places to punch are shown.



8. Using a center punch, the plate will be staked in place.



9. Indicated here are other...



10. ...places to punch.

After reconnecting the electrical portion of the unit, it should be ready to replace into the column. Use new shear bolts when replacing the lock, it will be safer and better in the end result.

I again want to thank Jay Skelton who collaborates with me on numerous articles that I've written over the years. He has recently enlarged his shop and is now doing a little supplying, and a little developing of tools. In upcoming articles I'll show you something he's working on. He's living proof that if you apply yourself to your trade, you will excel. ■

It's your
reputation.



Trust the
original.

[Click here for more information](#)